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# TEXT-BOOK FOR MENTAL NURSES

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# TEXT-BOOK FOR MENTAL NURSES

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*Issued by the Department  
of the Interior*

PRINTED IN THE UNION OF SOUTH AFRICA BY THE  
GOVERNMENT PRINTER, PRETORIA

1938



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## PREFACE.

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THIS TEXT-BOOK has been prepared in English and Afrikaans with the assistance of members of the medical staff of the Mental Hospital Service of the Union and, together with the Preliminary Handbook in Anatomy and Physiology, First Aid and Elementary Hygiene, recently issued by the Department of the Interior, it covers the syllabus prescribed by the South African Medical Council for the Final Examination in Mental Nursing.

The work was undertaken with the object of providing a nursing text-book in both official languages for use in South African mental hospitals.

The Afrikaans edition of the book is available as a separate volume.

*August, 1938.*







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## PART I.

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# INTRODUCTORY

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## CHAPTER I.

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### HISTORICAL REVIEW.

Insanity has been recognised from the earliest days of which we have any records, and occasional allusions to the subject and to actual cases of mental disorder are found in the Old Testament and in the literature of ancient times. It is only during comparatively recent years, however, that the subject has emerged from the clouds of ignorance and superstition in which it was enveloped and that scientific attempts have been made to investigate and understand the nature of the condition. In order to appreciate the advances which have been made a mental nurse should have some knowledge of the changes which have occurred from time to time and in different parts of the world with regard to the conception of the nature of insanity, and be acquainted with the history of the development of modern ideas and the influence which this development has had on the care and treatment of the insane.

For the purpose of description the history of mental nursing may be divided into three periods or stages, viz., in ancient times ; in the middle ages ; and in modern times, from the end of the 18th century.

**Ancient Times.**—Amongst the Greeks and the Romans enlightened ideas existed as to the nursing of the mentally afflicted ; elaborate instructions were laid down for those in attendance by a Roman physician, Caelius Aurelianus (400 A.D.), who advocated that “excited patients should be placed in a somewhat subdued light in a room with a mild temperature, and where there are no disturbing noises ; there should be no pictures on the walls, and the air should enter by elevated openings : the bed should be of solid construction

and should be so placed that the patients cannot see the door, and are not annoyed by what is passing''. He goes on to warn those attending the insane to beware of appearing to agree with the patient's delusions; but, on the other hand, they are to take care not to exasperate him by needless opposition and, further, they are to endeavour to correct his delusions, at one time, by indulgent and tactful condescension and, at another, by insinuations.

Amongst the Romans special homes were in existence for the treatment of the mentally sick. For those suffering from less obvious forms of mental malady, from insomnia, distressing dreams, anxieties, fears, obsessions and the like, the Temples of Aesculapius,\* pleasantly situated in shady groves on cool hillsides, afforded a retreat; here priests in the service of the temple and skilled in the treatment and nursing of nervous and mental troubles offered their ministrations. Indeed, a famous modern historian and philosopher, writing of the treatment of the insane, says, "so mild was their lot at Rome that it became a practice for citizens to shirk their public duties by feigning madness".

**Middle Ages.**—The Middle Ages are often referred to as the Dark Ages, and rightly so from the point of view of the insane.

At that time the phenomena connected with sickness of mind were engulfed in a sea of gross superstitions. Occasionally, mentally unbalanced persons were regarded as divinely inspired and in intimate communication with the Deity and were treated with veneration as prophets and seers. Unfortunately for the insane it was more commonly believed that their disorders of conduct, which we now realise to be the result of disordered minds, were the manifestations of evil spirits or demons. As a result they were often grossly ill-used, and many were burned as witches. Martin Luther (1483–1546) taught that insanity was caused by Satan; John Wesley (1703–1791) declared that "to give up witchcraft is to give up the Bible", and believed that most lunatics were really demoniacs.

---

\* Aesculapius, God of Healing in Roman and Greek mythology.



The belief was prevalent that an evil spirit invaded the human body, driving out and displacing the divine spark or soul of the individual. The natural result of such a conception of insanity was an attitude of fear and loathing towards the insane. When any treatment was used it was with the object of driving out the evil spirit which had taken possession of the body.

It has been said that, from the ninth century down to as late as the eighteenth, the history of the treatment of insanity is largely the history of witchcraft; the hallucinated insane were believed to be witches, peculiarly malignant agents of Satan, and, in the fifteenth century, witch burning became a favourite pastime or industry for almost two hundred years, such was the zeal to suppress "the wicked old women who had commerce with Satan".

The prevailing superstitious fears of witches, ghosts, and spells, in all probability account for the frequent occurrence of mass hysteria in the later Middle Ages, which often took the form of dancing manias. St. Vitus was regarded as the patron saint of those afflicted in this way, hence the term St. Vitus' Dance, which is still the descriptive name of that familiar nervous ailment, chorea.

The mistaken belief prevalent in those days that insanity was due to possession by Satan brought unreasoning fear and panic in its train, and was the cause of the inhumanity so generally shown to the mentally disordered in Europe.

**Modern Times.**—This may be said to have commenced at the end of the eighteenth century. Although by this time belief in possession by the Devil had subsided, treatment of the insane by harsh and repressive methods persisted. The false belief of centuries had left the prejudice of ignorance and fear. At the beginning of the nineteenth century it was not thought that the mentally disordered had any claim on society; it was not yet realised that insanity was a form of illness just as typhoid fever and pneumonia are forms of illness. The idea persisted, as a legacy from the past, that madmen were able, if they liked, to control their disorderly thoughts and actions,

and, therefore, the employment of force was regarded as justifiable. In 1854 a celebrated physician wrote as follows :—

“ Previous to the French Revolution (1789), the monk was the madman’s physician, and the monastery his asylum. There is abundant evidence to show that the ordinary mode of treatment was, to the last degree, cruel and inhuman, and, in some establishments at least, the practice consisted in the daily administration of about a dozen lashes to each unfortunate patient. The maniac was almost constantly chained and frequently was nude ; he was allowed to remain in a filthy condition. He was often placed in a cage of iron, where, crouching like a wild beast immured within his wire bound cell, whatever remained of mind or feeling was crushed to the lowest pitch by changeless monotony, or maddened by intolerable despair.

Whips and fetters were not deemed sufficiently ingenious ; chairs were employed so constructed that all movement of the limbs was prevented, and others were devised to whirl round the patient at a furious speed in order to produce vertigo and sickness ; muffling was also a frequent practice, by which was meant covering the mouth and nose very closely with a cloth in order to see if it would quiet the patient ”.

The first definite movement in the reform of the treatment of the insane was directed towards the abolition of this restraint by mechanical means, and in 1793 Pinel struck the chains from fifty of his patients in the famous Bicêtre Hospital in Paris.

Nevertheless, more than half a century had to elapse before Pinel’s example was boldly and universally followed in other countries, and even to-day there are places where his pioneer labours have had no influence.

The conception of mental nursing as a profession is a comparatively modern one. Before the nineteenth century the insane received no “ nursing ”, as we have seen, but, since the time of Pinel, the increasing interest taken in the study of mental disease, together with the ever extending adoption of the no—restraint system, demanded intelligent and trained nursing.



The first attempt at training attendants systematically in order to fit them for their duties in nursing the mentally disordered was made in Scotland in 1854, in England in 1881. Britain's example was followed in 1882 in America and in Germany in 1884. Many years had still to pass, however, before the necessity for the systematic training of mental nurses became universally recognised. The Royal Medico-Psychological Association in Great Britain was founded in 1841, but it was not until 1891 that this body instituted examinations and granted certificates of proficiency in this branch of nursing. The Netherlands Society for Psychiatry and Neurology awarded examination certificates for the first time in 1903. Rules for the training and examination of mental nurses in the Union were laid down by the South African Medical Council in 1931; previously mental nurses in South Africa were trained and examined under the rules and regulations of the Royal Medico-Psychological Association.

The profession of mental nursing is to-day a highly specialised one. It is a calling in the real sense of the word, and one which not only requires a high degree of intelligence and common sense, but also demands from the nurse's character the best that it has to give.

## CHAPTER II.

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### NATURE OF MENTAL DISORDER—OBJECTS OF TREATMENT.

#### Nature of Mental Disorder.

There is no definite boundary line between sanity and insanity, and it is impossible precisely to define the terms mental disorder and insanity. The symptoms of mental disorder may sometimes differ only in degree from normal mental processes and, just as it is impossible to say when day ends and night begins, so one cannot exactly state when sanity ends and insanity begins.

Disorder of mind shews itself in abnormal conduct, that is, in deviations of the demeanour, actions and conversation of the individual. It has been said that so long as a person's ideas, speech and actions differ in no great degree from those of the majority of his fellows in the same station in life, he may be regarded as sane; when he becomes incapable of forming correct judgments, his memory fails, or he loses self control, he may be considered to be insane.

Insanity may be regarded as the result either of disease of the brain or of disorder of the mind. The brain is the organ of the mind. The brain, however, is a structure composed of materials which can be seen and felt, while the mind is invisible and intangible, and we are aware of its existence only by observation of its activities in ourselves and others in the processes of feeling, thinking and acting.

Every mental process is accompanied by a corresponding bodily process but it is unknown how these processes are connected. In some cases of insanity organic disease of the brain can be demonstrated; in other cases, however, no signs of such disease may be apparent. Some authorities consider that the symptoms of insanity should be regarded as secondary to corresponding changes in the brain; other authorities believe that mental processes may be studied without reference to such changes supposed to occur in the brain. The former view, termed the physiological conception, regards the symptoms of insanity as the result of disease or abnormalities in the



brain, while the latter, the psychological conception, considers that the symptoms are due to abnormal mental processes or faulty working of the mind.

### **Objects of Treatment.**

The objects of treatment in mental disorder are to promote recovery, to alleviate symptoms, and to provide supervision and control.

The primary object of treatment is, of course, to cure the illness so that the individual may return to an active and useful life. Unfortunately, we have at present only an imperfect knowledge of the manner in which the mind works and of the brain changes which accompany mental activity. Treatment is therefore rendered difficult in many cases and is thus often limited to attempts to alleviate the symptoms.

It is essential to observe carefully and regulate the behaviour of the mentally ill, since loss of self-control, more or less complete, is so often an accompaniment of disorder of the mind.

In most, if not all, cases of mental illness, a great deal can be done towards restoring to harmony the disordered working of the mind by inducing the patient to undertake suitable occupation ; the provision of such occupation is a very important part of treatment.

The abnormal and irresponsible behaviour of mentally disordered persons may necessitate their being placed in a mental hospital or similar institution where adequate supervision and control can be exercised under suitable conditions by a trained nursing staff. Care and treatment in a mental hospital is specially needed for those patients who are :—

- (1) Dangerous to themselves or others because of suicidal or homicidal propensities ;
- (2) Unable to look after themselves because of their inability to attend to their bodily needs or to guard against common physical dangers ;
- (3) A nuisance to the community because of objectionable behaviour or offensive habits.

## CHAPTER III.

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### THE NURSE.

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RESPONSIBILITIES—DUTIES—DISCIPLINE—LAWS AND  
REGULATIONS.

#### **Responsibilities.**

The undertaking of the nursing of a mentally sick person is a serious responsibility, for the patient's prospects of recovery can be irretrievably ruined by an unworthy nurse.

The nurse must first of all rid her mind of misconceptions which still exist with regard to the mentally ill. She must not make the mistake of regarding all her patients as people who are quite incapable of reasoning in any way, who are unable to appreciate the ordinary decencies of human intercourse, or who do not need the sympathetic tact and kindly management accorded as a matter of course to the physically sick. A mental nurse, in the true meaning of that title, must grasp and thoroughly understand that there is nothing incomprehensible or supernatural occurring in the mind of the patient, but that the departure from health consists of a disordered functioning of the normal mental processes.

Once having grasped this fact the nurse will not fall into the error of adopting towards her patients that attitude of superiority and contemptuous condescension which proclaims a complete ignorance of the nature of the illness which she pretends to nurse, and at the same time destroys all possibility of establishing, between her patients and herself, a relationship based on sympathy and understanding. She will realise, rather, that her patients are human beings like herself, to be helped along the difficult road to recovery by means of her aid and encouragement, and by the example and support of her own vigorous and healthy mind.

Of the patients with whom the nurse will come into close and continuous daily contact many are undergoing a long and, it may be, a permanent separation from their families, relations and friends. In many instances their mental illness may have been caused by misfortunes and long continued unhappiness, and may have been endured in the face of unsympathetic handling by those who, whilst desirous of helping, failed to realise the true nature of the condition.

It is expected, however, that the nurse should give to the patient not only the benefit of her knowledge and skill, but also that understanding, sympathy and help which the relatives, through ignorance, may have failed to give.

The nurse, in the course of her training, will attend lectures and demonstrations and will thus acquire knowledge, but, necessary as this knowledge is, unless in addition she develops certain personal qualities, she will never become an efficient mental nurse.

These qualities, the possession of which is so essential, can hardly be taught in lectures or books. One of the most important is the quality of understanding, that is, the power of placing oneself in imagination in the patient's position. The ability to do so enables the nurse to carry out one of her most important functions, that of bringing her own mind, her own personality, into touch with the sick mind of her patient. Once the nurse succeeds in establishing such contact her relation to her patient is placed on a sound footing, and the task of exercising an intelligent control over her patient becomes less difficult. The power of seeing into the patient's mind, and the practice of following up as closely as possible the confused and disordered train of thought, enables the nurse to anticipate the patient's eccentric actions, grasp the reasons for them, and be prepared to deal with them.

From this capacity to understand spring other qualities so essential in the make up of a mental nurse, such as sympathy, patience, intelligent forbearance (firmness with gentleness), constant cheerfulness and unfailing courage.



It is inevitable that the nurse will hear, from some of her patients or from other sources, matters of a confidential nature concerning their private affairs or those of their families or relations. To repeat such matters outside the hospital, or to gossip carelessly about them to others, is a betrayal of the patient, and an act of disloyalty towards the hospital in which the nurse works. In all her relations with her patients a nurse must exercise the greatest discretion, only imparting knowledge of her patient's private affairs to the sister in charge of the ward, the matron or the physicians.

A nurse should also be equally guarded and discreet in conversing with patients; she should make it an inviolable rule never to discuss her own or others' private affairs with her patients. It is particularly indiscreet to discuss with a patient others connected with the hospital. A nurse who is indiscreet in these ways will quickly gain the reputation of being a gossip, whereas one of the first questions asked concerning a nurse where promotion is in question, or a position of responsibility has to be filled, is "Is she discreet?"

A discreet nurse, therefore, is one who realises that in her relation to patients she is in a position of confidence and trust, and that the betrayal of such trust by irresponsible and mischievous gossiping is an act of disloyalty to her patients, the hospital and her profession.

Absolute honesty in all dealings with patients is demanded as an essential qualification of the capable nurse: she must never endeavour to put off or pacify a patient by telling a lie, or promise a patient something which she cannot fulfil.

A nurse has a special responsibility towards her patients in ensuring that those of them who wish are given the opportunity to write letters to their relatives or friends. It is not the nurse's duty to read such letters but it is her duty to see that they unfailingly, through the proper channel, reach the hands of the physician, whose duty it is to censor them.

A nurse serving in a mental hospital naturally comes into frequent contact with relatives and friends of patients; she should always remember that, in receiving such visitors, any lack of courtesy or sympathy on her part may not only arouse

resentment, but may also destroy the confidence of the relatives in the hospital, its administration and its treatment of the patient. To cause, even thoughtlessly, additional distress of mind to relatives already perhaps over-wrought and torn by anxiety, is a serious offence against the nurse's profession and hospital. The father or the wife who is not courteously and sympathetically received by the nurse will not unnaturally assume that the daughter or the husband is treated in the same inconsiderate and callous manner. The possession of understanding, on which stress has already been laid, will make it impossible for a nurse to be guilty of such conduct.

Furthermore, a nurse who is serving in a mental hospital in the Union should not forget that she is a member of the Government Service and, therefore, a servant of the public.

### Duties.

A nurse who takes a proper pride in her profession will naturally pay careful attention to her own appearance and that of her patients and the wards which they occupy. She will see that the wards are made as home-like and cheerful as possible, and will, to the best of her ability, inculcate the habits of personal cleanliness and neatness of which she herself is expected to be an example.

If the daily routine of the hospital is to be conducted smoothly and efficiently, the nurse, as an essential part of its organisation, must learn to perform her duties quietly and without fuss, with careful attention to detail, and must be punctual in her attendance on these duties. A nurse who carries out her duties punctually and calmly adds to the efficiency of the hospital as a whole; one who is always late, always in a hurry, and consequently irritable and fussy, upsets the patients and impairs the efficiency of the hospital.

The nurse must, therefore, cultivate the quality of imperturbability, for the meeting and controlling of emergencies in some shape or another form a daily part of her work. Surrounded as she is by unstable persons who are excitable, restless and emotional, she will, if she allows herself to be flustered or put out, or if she shows indecision in the face of emergency, inevitably forfeit the confidence of her patients.



### Discipline.

In any community where a daily routine has to be faithfully and punctually carried out in order to fulfil a definite purpose, the individual duties of members must be carefully laid down and their conduct regulated accordingly. Only in this way is it possible to ensure that the units forming the community will harmoniously and smoothly interact and co-operate, and so produce an efficient organisation. Hence the necessity for rules and regulations.

The nurse must realise that the rules have been laid down as the result of long experience and wide knowledge of the conditions which obtain in institutions, and that they are not framed and enforced for the purpose of causing irritation, or for the mere sake of having rules, but that they exist for the purpose of promoting the efficiency, happiness and welfare of patients and staff as a community. In order, therefore, that all connected with the hospital shall derive the greatest possible mutual benefit, the rules and regulations must be obeyed by every nurse. Discipline, in addition, means a great deal more than merely obeying rules in order to avoid the results of disobedience. It also means exercising self-control, being imbued with loyalty to the Service, having honesty of purpose and endeavour, pride in one's profession and self-respect, and not until the nurse realises and understands this is she competent to manage mental patients. It is incumbent on the nurse to make herself familiar with the rules and regulations of the hospital in which her training is taking place.

The nurse whilst on duty must be alert and keenly observant. If she is not observant her daily reports will be both inaccurate and misleading, and lack of observation will sooner or later lead to disaster for either patient or nurse, possibly for both.

The nurse who is vigilant and watchful, who consistently cultivates her powers of observation, will soon learn to recognise signs in her patients indicative of changes in the course of the mental illness, or of the imminence of an epileptic fit; slight changes in behaviour, or suspicious actions, may indicate to the observant nurse that a patient is planning to



escape, or even to commit suicide. The nurse who has cultivated her powers of observation will not fail to note on the physical side a lack of appetite in her patients, an alteration in the complexion, irregularity of the usual daily action of the bowel, a change in the speech, a muscular weakness, or a disturbance of the menstrual function. Aware of the importance of these signs she will be alert and watchful and will observe and report their occurrence.

The nature of the relationship which prevails between the nurse and the patient is of vital importance; without the intelligent co-operation of the trained mental nurse even the best medical skill and treatment may be of no avail in alleviating or curing mental illness.

### **Laws and Regulations.**

Any person who is certified as mentally disordered or defective under the Union Mental Disorders Act (No. 38 of 1916) comes under the special protection of the law of the land.

Any act of ill treatment or wilful neglect committed against any individual certified as a mental patient is a criminal offence, and any person found guilty of such an offence is liable, on conviction, to heavy penalties.

The severity of the punishment attaching to an offence of this nature indicates the serious view taken of it by the State, and the nurse who is capable of deliberately illtreating a patient in order to intimidate or punish that patient, or to give vent to anger or spite, is a disgrace to an honourable profession which is earnestly striving to establish itself in the confidence and trust of the public.

**Mechanical Restraint.**—By mechanical restraint is meant the restriction of the bodily movements of a patient by any form of appliance. It is an offence against the law to restrain a patient by mechanical means unless the restraint is necessary for the purposes of surgical or medical treatment, or to prevent self-mutilation. Such mechanical restraint can only be used for the objects specified above and on the authority of a physician. An accurate record of all such cases must be kept.

**Seclusion.**—If, at any time between the hours of 10 a.m. and 5 p.m., a patient is in a room alone with the door locked, or is otherwise compulsorily confined alone between these hours, then the patient is deemed to be “secluded”.

No seclusion may be employed in the case of any patient under any pretext whatsoever except on the authority of a physician.

## PART II.

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# THE NURSING OF THE SICK.

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## CHAPTER IV.

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### THE INFIRMARY WARD.

HEATING, LIGHTING AND VENTILATION—FURNITURE—CLEANING—EQUIPMENT—DUTIES OF WARD STAFF—VISITORS—ATTENDANCE ON DOCTOR—THE BED—BEDMAKING—CHANGING SHEETS—DRAWSHEETS—WATER BEDS—AIR BEDS—AIR RINGS—SPONGE MATTRESS—HOT WATER BOTTLES—DAILY TOILET OF THE SICK—WASHING—BLANKET BATH—BEDPANS AND URINALS—ADMISSION OF PATIENTS—OPEN-AIR TREATMENT.

In some institutions all patients who are suffering from bodily illness are transferred to special wards reserved for them—the infirmary or hospital wards; in others, where the structural conditions or other circumstances do not permit this practice to be carried out, sick patients remain in their own wards. The assembling together in an infirmary ward, suitably staffed and equipped for the purpose, of all patients who are ill, is the more efficient method, as it facilitates their proper nursing care and removes the many difficulties involved in attending to the needs of a number of sick persons who are distributed in several different wards in various parts of the institution.

The infirmary ward should be bright and cheerful and large enough to allow at least 100 square feet of floor space or 1,000 cubic feet of air space for every patient.



### **Heating, Lighting and Ventilation.**

The general principles and methods of heating, lighting and ventilation are described in the Preliminary Handbook.

The temperature of an infirmary ward should be kept at about 60° F. In summer it may be difficult to keep the ward cool, and the blinds or window curtains should be drawn before the sun becomes powerful. The ward should be well lighted during the day, but at night there should be only sufficient light to permit the necessary observation of the patients.

During the day sunlight should not be allowed to fall directly on a patient's face, and at night artificial lights should be provided with shades which can be adjusted to prevent the light shining into the patient's eyes.

### **Management of Ward.**

**Furniture.**—The infirmary should contain no superfluous furniture. Articles of furniture, pictures, carpets and curtains, etc., occupy space, and harbour dust and germs.

The beds should be placed with their heads towards the wall and should be separated by sufficient space on each side of the bed to allow easy access to the patient. They should be between windows, if possible, and not immediately underneath a window or too near the door, as this would expose the patient to rapid currents of air or draughts which might cause chilling or discomfort.

**Cleaning.**—The daily routine work of cleaning and tidying the ward, making the beds and washing the patients should be completed by 10 a.m. before the doctor's visit.

The ward must be thoroughly cleaned every day. It is advisable when dusting to use a cloth damped with disinfectant in order to prevent the dust being spread all over the ward. All corners and crevices should be carefully cleaned and beds and tables moved if necessary. Floors are usually swept and polished. The work of cleaning the ward should be done as quickly and as quietly as possible to avoid unnecessary disturbance of the patients.

**Equipment.**—The various articles of equipment must be kept in good order and in the places provided for them. There should be an adequate stock of equipment such as blankets, drawsheets, dressings, disinfectants, urine bottles, bedpans, hot water bottles, etc. Instruments, catheters and enema syringes, etc., must be properly cleaned and sterilised, and the rules regarding the safe custody of drugs, medicines and disinfectants must be strictly observed.

All soiled linen and clothing should be removed from the ward at once. If they have been used for a case of infectious disease, they must be soaked in disinfectant and sent separately to the laundry. Bedpans and urine bottles should be emptied, washed and rinsed with disinfectant after use and should be covered with a cloth while being removed from the ward for this purpose. Sputum cups should be frequently emptied and disinfected. Flies are a menace to health and measures should be taken to keep the ward free from them.

### **Duties of Ward Staff.**

At the head of the nursing staff of a ward there is usually a sister or a charge male nurse; the staff further consists of a staff or second nurse and the necessary number of nurses or probationers. The sister, or nurse in charge, is responsible for the proper carrying out of all the duties of the ward and the maintenance of order and discipline. Every nurse in the ward should have special duties assigned to her and a timetable for the work should be drawn up. The fact that the patients are suffering from mental disorder or defect and that, as a result, their co-operation cannot always be obtained, should be borne in mind. The object of treatment and nursing is to promote recovery and to alleviate the symptoms of disease, and a competent nurse will endeavour to understand her patient, the condition from which he is suffering, and the objects of the treatment prescribed. She should keep a record of the doctor's instructions and be meticulously careful that they are carried out.

It is the duty of the nurse in charge to give the staff nurse full information as to the treatment prescribed for every patient, and this rule also applies when handing over to the



night nurse. Special orders should be given in writing, and any medicines or stimulants which may be needed must be left accessible to the night nurse. The nurse in charge should see that the junior nurses obtain practical and varied experience in nursing so far as this is possible and, in order to ensure this, she should change their routine ward duties at intervals.

**Visitors.**—When relatives or friends visit patients, they should be received with kindness and courtesy. The patient should be made clean and tidy and chamber-pots and sputum cups should be emptied. If the patient is in a ward with others, a screen may be placed round the bed, and chairs provided, to enable the visitors to converse in comfort and privacy.

A nurse should meet the doctor, matron or head male nurse whenever any one of them visits the ward, and should immediately summon the nurse in charge, who should accompany the officer during the visit.

**Attendance on Doctor.**—At the bedside, the nurse stands opposite the doctor on the other side of the bed; she should have the patient's temperature chart ready for inspection and be prepared to answer questions regarding his condition, such as the quantity of nourishment taken, the duration of sleep, the action of the bowels and any special symptoms observed. If the doctor wishes to examine a patient, any instruments or appliances which he may need must be prepared and ready for use, and the bedclothing arranged to facilitate examination; soap, warm water, nail brush, towel and disinfectant lotion should be available.

It is usual to have in the ward a small tray on which are placed any instruments which may be required. The tray is covered with a small towel and on it are placed a clinical thermometer, a bowl or basin containing a sterilised tongue depressor, a pair of dressing forceps and an empty kidney-shaped dressing tray. These should all be covered by another sterilised towel. If other articles are needed, such as rubber gloves, ear and nose specula, scalpels, needles, etc., they should be sterilised and placed in a bowl. The clinical thermometer may be kept in a small glass vase containing spirit lotion, the



bottom of which is covered with a piece of cotton wool to prevent the fragile bulb of the instrument being broken ; a piece of jaconet with a hole in the centre through which the thermometer is introduced may be tied round the neck of the vase. If a portable light is likely to be needed, the nurse should know the position of the nearest wall plug and see that the apparatus is in good order. It may be necessary to move the patient's bed into a better lighted position, and this should be done before the doctor's visit.

In order to prepare a patient for examination by the doctor, the counterpane and blankets should be untucked at the sides of the bed and folded so that the part of the body to be examined is covered only by the sheet which can afterwards be easily turned down. The patient's bedclothing may be pulled up to expose the part, or the garments removed if necessary.

### **The Bed.**

The object of a bed is to provide rest and comfort and, when it is occupied by a sick patient, this must always be borne in mind by the nurse. Hospital beds are usually higher than ordinary ones in order to enable the nurse to attend to the patient without unnecessary stooping. The bedstead is made of iron, with a spring mattress, and is 6 feet to 6 feet 6 inches long, 3 feet to 3 feet 6 inches wide, and 2 feet high.

The wire mattress must be strong and firm, allowing little or no sagging, and should be covered with canvas to protect the coir mattress, or this mattress itself may be enclosed in a loose washing cover. The mattress is filled with horsehair or thoroughly teased coir evenly distributed and firmly packed. On top of the mattress, a thin under-blanket may be placed, and over this the bottom sheet, the edges of which are tucked beneath the mattress. Two pillows are provided, the lower one hard and the upper one soft. With epileptic patients the soft pillow may have to be removed. The patient is covered by a sheet and blankets, the edges of which are tucked under the mattress, and over all is placed a counterpane.

When a patient's habits are faulty the mattress must be protected by a waterproof sheet, and a draw sheet is placed across the bed under the patient's buttocks.

Beds ought to be kept neat and uniform in appearance without sacrificing the patient's comfort, and the upper bed-clothing should not be stretched and tucked in so tightly as to prevent the patient moving freely in the bed.

### **Bedmaking.**

If the patient is in a fit condition to be moved, he may be placed on a spare bed or be covered with a blanket and allowed to sit in a chair while his bed is being remade. The bed clothing should be removed and placed on a chair at the end of the bed and the clean sheets and other bedclothing arranged on the bed.

When the patient is acutely ill or suffering from a condition which prevents his being moved, the following method of remaking the bed may be used :—

**Changing the Upper Sheet.**—The upper bedclothing is untucked and loosened all round the bed and the counterpane and upper blanket are removed, leaving the sheet and one blanket to cover the patient. A clean sheet and the blanket which has been removed are then laid in position, on the top of the blanket and sheet left on the bed. The nurse then holds the clean clothing firmly in position under the patient's chin with one hand while she pulls out the soiled sheet and blanket from the bottom of the bed with her other hand. This blanket and the counterpane are then replaced on the bed and the bedclothes neatly arranged and tucked in. This method of changing the upper sheet can be more easily carried out by two nurses, but can be done by one if assistance is not available.

If the upper sheet is only slightly soiled, it may be used to replace the soiled bottom sheet in order to save washing.

**Changing the Under Sheet.**—The pillows are first removed and the patient is gently rolled over, without removing the upper bedclothes, so that he lies on his side, usually the left,

near the edge of the bed. The clean sheet is unfolded and rolled up lengthwise to about as far as its middle. The soiled sheet is then loosened all round the bed and, with the draw sheet, is rolled up lengthwise from its right edge as far as the patient's back. The rolled up half of the clean sheet is then placed alongside the rolled up part of the soiled sheet and its unrolled part is spread over the right side of the bed and the edges are tucked under the mattress. The patient is turned over the rolled up parts of the two sheets on to his right side and will then be lying on part of the clean sheet near the right side of the bed. The nurse then goes to the other side of the bed, removes the soiled sheet and unrolls the clean one, spreading it out and tucking it in.

In some cases, such as fracture of the lower limbs, the under sheet may be changed in a similar manner from the foot or head of the bed instead of from side to side as described above.

**Draw-sheets.**—In cases where the bottom sheet is likely to become stained, a draw-sheet is used. This can be made from sheeting or by folding an ordinary sheet lengthwise. It is placed across the bed and should be broad enough to reach from the armpit to the knees. It should be pulled tight and tucked in firmly to prevent creasing. A piece of waterproof sheeting may be placed underneath the draw-sheet. The chief advantage of a draw-sheet is that it can be easily removed and replaced. If the part on which the patient is lying gets hot and uncomfortable, a fresh piece of it can be pulled through. It is more economical to make draw-sheets from pieces of old sheeting than to subject good sheets to frequent washing.

**Waterproof Sheets.**—The object of a waterproof sheet is to prevent the mattress becoming wet or soiled. The nurse should see that it is not cracked and perished. Waterproof sheets must be periodically removed, scrubbed with soap and water and dried; they must be rolled and not folded when not in use.

**Water Beds.**—A water bed resembles a large rubber hot water bottle, and is nearly the size of a mattress. It is used



in lengthy illnesses where there is a tendency for the patient to develop bed sores. The correct way to arrange a water bed in position is as follows:—

Cover the wire mattress with fracture boards, and place the coir mattress in position. Then place the empty water bed on the top of this and fill it with warm water at a temperature of about 100° F. through a funnel. The water bed should be only about half filled and air should be expelled before the stopper in the inlet is screwed in. Cover the water bed with a piece of old blanket and make the bed in the usual way. When the water bed becomes cold it must be partly emptied and refilled with hot water. When it is no longer required it is emptied by placing it in a slanting position until all the water has run out; it is then rolled up for storage.

Water beds are expensive articles of equipment and are easily damaged. Care must be taken that they are not punctured by safety pins and that no grease comes in contact with them. Rubber is liable to perish if not used, so it is advisable to unroll all water beds periodically and fill them with water for a time.

**Air Beds.**—These are similar to water beds, but contain air instead of water; they are inflated with a pump. They require the same care as water beds. Another form consists of several compartments each of which is inflated separately.

**Air Rings.**—An air ring is an air cushion in the form of a ring, and is used to relieve local pressure. It must not be over-inflated, and must be placed in position underneath the bottom sheet.

**Sponge Mattress.**—A modern form of mattress suitable for cases of long illness is the sponge mattress. This has an outer case similar to rubber sheeting while the inside consists of sponge rubber. It is resilient and comfortable and easily cleaned.

**Hot-water Bottles.**—These may be made of india rubber, earthenware or metal. They are necessary articles of equipment and a source of great comfort to the sick. They must

be well and securely covered with blanket or flannel, and the water must not be too hot or they may cause severe burns, especially with unconscious or paralytic patients. They are usually placed beneath the bottom sheet or blanket.

### Daily Toilet of the Sick.

**Washing.**—Patients confined to bed must be washed twice a day; they should be given a blanket bath in the morning and their faces and hands washed at night. Patients whose habits are faulty must be thoroughly washed whenever they soil themselves. The utmost cleanliness is essential for the patient's health and comfort, and to prevent bed-sores.

**Blanket Bath.**—In cold weather, before the bath is given, the windows and doors must be closed and a screen may be placed round the bed. The following will be required at the bedside :—

A basin of warm water, soap, two flannels, spirit lotion and dusting powder, tooth brush and tooth powder, brush and comb, a pair of nail scissors, a small and a large towel, a glass of drinking water, and a small basin. All these are placed on a table near the bed before the washing is begun.

Remove the upper bed clothes and cover the patient with one of the blankets; remove the patient's night-gown under the blanket and arrange a waterproof sheet covered by a blanket underneath the patient. If the patient is acutely ill and not allowed to move, the blanket and waterproof sheet must be placed in position by the method described for changing the under sheet. Wash the patient's face and neck, paying special attention to the eyelids, nostrils and ears, and dry thoroughly. Wash and dry the shoulder, armpit and arm on one side and then on the other. Turn down the covering blanket to the hips and wash the chest and abdomen. Replace the blanket and wash the lower limbs, exposing one at a time. The patient is now turned on one side and the back and buttocks well washed and dried; these parts are next rubbed with spirits and powdered. The genitals are washed last underneath the blanket using a separate flannel for the purpose; the patient may be able to do this for himself. The lower



blanket and the waterproof sheet are both removed and the patient put into a warmed night-gown. The teeth are next cleaned, and the mouth rinsed with the drinking water, which is received in the small basin. The hair is brushed and combed, and long hair plaited on each side. Male patients may require shaving; a safety razor is used for this purpose. The nails are examined and cut if necessary.

In helpless cases when the patient is unable to use a toothbrush, the mouth is cleaned by means of small pieces of cotton wool or lint dipped in a special lotion or a mixture of glycerine and lemon juice. The wet piece of wool is wrapped round the nurse's index finger which is inserted into the patient's mouth, and the teeth and gums are gently rubbed; several pieces of wool may be needed.

Last thing at night after the last meal the patient's hands and face are washed, the hair brushed and combed, and the teeth and mouth cleaned. The pillow should be shaken and the bed tidied.

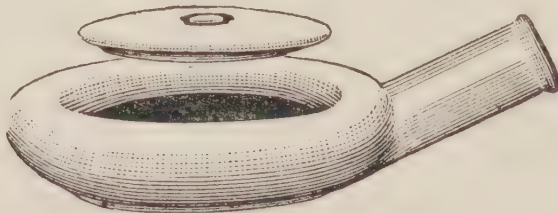


FIG. 1.—BEDPAN, CIRCULAR.

**Bedpans and Urinals.**—The bedpans most commonly used are the circular and slipper forms. A bedpan should be warmed and covered with a cloth before being taken to the bedside. Unless the patient is helpless, it can be given by one nurse, who should place one hand under the lower part of the back and assist the patient to raise himself while, with the other, she places the bedpan in position. With completely helpless patients two nurses will be required. After use, the bedpan should again be covered with the cloth and immediately removed from the ward, emptied and thoroughly rinsed out. On every occasion on which a bedpan is used, great care must be taken to see that the patient is left scrupulously clean.



Urinals in the shape of bottles may be used by male patients who are unable to get out of bed to pass water. They should be removed, emptied and rinsed out immediately after use.

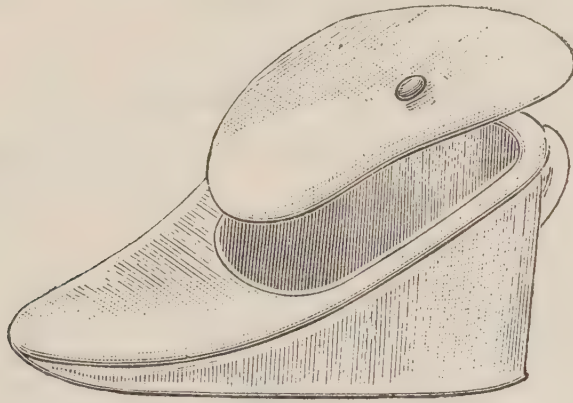


FIG. 2.—BEDPAN, SLIPPER SHAPE.

Both bedpans and urinals should be thoroughly cleaned once a day with soap and hot water.



FIG. 3.—URINAL.

### Admission of Patients.

When a patient is removed to the infirmary ward, the case sheets and any medicine which he is taking should accompany him and the nurse in charge of the ward from which the patient is transferred should furnish a report in writing to the sister of the infirmary ward on the general condition of the patient and the nursing treatment which has been employed. The report should specify details with regard to diet, the administration of medicines, the time when the patient last had an action of the bowels and passed urine, the time and nature of the last meal and whether the patient has refused food. Information regarding the habits of the patient and whether he is violent or has shown suicidal tendencies should also be furnished and, in the case of women, the date of the last menstruation should be stated.

On the admission of a sick patient into the infirmary ward, the sister should note and record his temperature and rate of pulse and respiration. The patient should also be examined for any signs of injury or disease and any evidence of pain or tenderness should be noted.

### **Open-air Treatment.**

Convalescent patients, and those suffering from pulmonary tuberculosis and some forms of mental disorder, benefit from continuous treatment in the open air, and in these cases the bed may be placed on the stoep or in a shelter or tent. Arrangements must be made to protect the patient from wind, rain and direct sunlight by means of screens or blinds and, in cold weather, hot-water bottles and extra blankets must be provided.

For tuberculous patients specially constructed open air shelters are used, with open sides which can be closed in when necessary by stout canvas blinds.

Tents are not a satisfactory means of providing open-air treatment, but it is sometimes necessary to use them. The bottom of the tent should be rolled up and the door left open to provide ventilation which is often inadequate.

## CHAPTER V.

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### SYMPTOMS AND SIGNS OF DISEASE.

SYMPTOMS AND SIGNS—GENERAL OBSERVATION OF PATIENTS—  
POSITION AND ATTITUDE — APPEARANCE — TONGUE —  
TEETH AND GUMS—BREATH—DISTURBANCE OF APPETITE  
—LOSS OF WEIGHT—SLEEPLESSNESS—DELIRIUM—COMA  
—PAIN—HEADACHE.

#### Symptoms and Signs.

No nurse can carry out her work efficiently unless she has a reasonable knowledge of the various signs and symptoms of bodily disease. Such knowledge, in the case of the mental nurse, is of special importance, as patients suffering from mental disorder are often incapable of appreciating alterations in their bodily condition, or of indicating the presence of any symptom of ill-health felt by them. Often it is only by skilful observation on the part of the nurse that the early symptoms of bodily disease in mentally disordered patients are brought to the notice of the doctor.

Symptoms are divided into two types :—

(1) **Subjective Symptoms.**—These are indications of disease which the patient experiences and of which he may complain such as, pain, discomfort, nausea, giddiness, defect of sight, feeling too hot or cold, etc.

(2) **Objective Symptoms, or Signs.**—These are signs of abnormality or indications of disease which the doctor or nurse may observe or elicit, for example, loss of weight, cough, rise of temperature, or increased rate of pulse or respiration.

#### General Observation of Patients.

The detection of symptoms and signs in the early stages of bodily disease is of the highest importance with regard to the patient's treatment and ultimate chance of recovery. The nurse in charge of the mentally disordered must therefore make it her duty to study carefully the condition of her patients. She should cultivate her powers of observation in



order that she may acquire the habit of quickly noticing changes in a patient's condition or any symptoms which may appear. The fact that the nurse spends so much of her time with the patients under her charge gives her many more opportunities than the doctor can have to observe such changes.

Whenever the nurse has reason to suspect the presence of some bodily illness in a patient, she should take the temperature and also the pulse and respiration rates, as variations from the normal occur frequently in disease.

A nurse possessing the necessary knowledge, and capable of using her intelligence in deciding upon the seriousness or otherwise of the symptoms or signs observed and, above all, capable of describing accurately and briefly what she has observed, can truly be said to have mastered one of the most important aspects of her profession.

The following are some of the points to be observed as regards the patient's general aspect and condition.

**Position and Attitude.**—A person in good health lies in bed in any attitude which he finds comfortable and changes his position accordingly. In the late stages of diseases such as typhoid fever, and in states of exhaustion, he tends to slip downwards towards the foot of the bed and makes little effort to find a more comfortable position. The attitude assumed by the patient may be significant. In abdominal diseases, especially in peritonitis, he lies on his back with the knees bent and the legs drawn up in order to relax the abdominal muscles and relieve the pain; in pleurisy with effusion he will be found lying on the diseased side to allow the other more freedom for expansion; in meningitis the neck is rigid and the head is bent backwards; and in some cases of heart and lung disease the patient is unable to breathe in a recumbent position and has to be propped up with pillows or a bed rest.

**General Appearance.**—The general state of development and nutrition and the presence of any deformities or abnormalities should be noted. In certain diseases the face may show characteristic signs. In cases of serious illness, particularly

abdominal disease, the expression may be one of anxiety and, in the later stages of typhoid fever, it is often dull and apathetic. The term “*facies hippocratica*” is applied to a condition seen in acute peritonitis in which the eyes are dull and sunken, the nose pinched, the mouth open, the skin livid and the extremities cold. The expression may also show that a patient is suffering from pain.

Flushed cheeks are suggestive of fever, and pallor may be the result of severe haemorrhage or shock. The colour of the skin is yellow in jaundice and pernicious anaemia, bronzed in Addison's disease, and often dusky or blue in cases of heart or lung disease. On the lips and teeth, in febrile states, there is sometimes a deposit of brown crusts, called *sordes*, consisting of cast off epidermal cells, particles of food and dried saliva. An eruption of blisters (herpes) may be seen on the lips in some cases of pneumonia. The lips are pale in anaemia and may be cyanosed or blue in cases of heart disease. The presence of any skin eruption or signs of injury should be noted. There may be a discharge from the nostrils or ears, and the nurse should note if it consists only of clear mucus or if it contains blood or pus.

Puffiness or swelling of the lower eyelids is one of the signs of kidney disease.

The sides of the nostrils (*alae nasi*) sometimes move with the respirations in cases of pneumonia and other illnesses where there is difficulty in breathing.

In dropsy the skin is swollen and the swelling pits when pressed with the finger.

The sweat has a peculiar sour smell in rheumatic fever and, in jaundice, it becomes yellow and may stain the clothing.

Rigors, or fits of shivering, may occur at the onset of fever. In cases of brain or nerve disease, there may be convulsions, twitchings, tremors, squint, or paralysis of the limbs. The patient's consciousness may be impaired or he may be in a state of delirium or coma. The presence of enlarged glands or abnormal swellings in any part of the body should be noted.

**Tongue.**—"Put out your tongue" is one of the routine requests of a doctor in a general examination of a patient. The condition of the tongue is a good and easily available indication of alimentary and other disorders.

The main points to be noted in examination of the tongue are :—

(a) Unusual coatings or altered colour.

(b) Size and shape.

(c) Abnormal movements.

(a) Disorders of digestive processes are the chief cause of the presence of coating of the tongue. A white layer all over the tongue is present in gastric disorder ; it may, however, appear when the patient is on liquid or soft diet, as the accumulation of epithelium on the surface of the tongue is not removed by friction during mastication.

A thickly furred, brownish, and often dry and cracked surface is observed in fevers and exhausting diseases. The "strawberry tongue", a white coating through which red spots protrude, is typical of scarlet fever.

A red, thickened and "angry" looking tongue is often observed in the last stages of serious disease.

(b) The tongue may become large and flabby, showing indented marks on its edges caused by the teeth. Such a condition is common in dyspepsia. Ulcers may be observed on the surface of the tongue. Although usually due to some simple cause, they may be the first signs of cancer, and their presence should always be reported. Scars or recent marks of bites are found in epilepsy. The tongue is usually large in cases of cretinism and mongolism.

(c) Tremor of the tongue, protrusion to either side, or complete paralysis of the tongue, occurs in some diseases of the nervous system.

**Teeth and Gums.**—Decayed teeth are a common cause of digestive disorders.



Infection of the gums at the base of the teeth (pyorrhoea) and the consequent swallowing of pus is a definite source of general ill-health accompanied by digestive trouble. The gums may be pale in anaemia, or bright red, thickened and soft in scurvy, or as a result of prolonged administration of medicines containing mercury.

**Breath.**—In health the breath is usually free from unpleasant odour, but in certain diseases it may have a characteristic smell which is sometimes offensive. In some cases of gastric disorder the breath is unpleasant, and decayed teeth, pyorrhoea, unhealthy tonsils and certain diseases of the nose may cause foul breath. In pulmonary tuberculosis the breath is often offensive, and in bronchiectasis and gangrene of the lung it has a characteristic putrid smell. In intestinal obstruction, the breath may have a faecal odour. An ammoniacal or urinous smell may be noticed in uraemia, and, in diabetes and cases of starvation, the breath often has a sweetish odour which has been compared to that of new mown hay or ripe apples. Various drugs, such as paraldehyde, creosote and turpentine impart their distinctive odours to the breath, and a smell of garlic may sometimes be noticed in the breath of patients who are taking medicine containing bismuth.

**Disturbance of Appetite.**—Anorexia, or loss of appetite, is a common symptom and does not necessarily indicate disease of the stomach or bowel; in fact, in some forms of gastric disorder, there is a craving for food.

During fever, and in some forms of mental disorder, e.g., melancholia, appetite is diminished or lost as a result of impairment of digestion and faulty secretion of gastrointestinal juices. The appetite may be excessive in diabetes and some forms of dyspepsia, or perverted during pregnancy

**Loss of Weight.**—This occurs in nearly all forms of acute illness. It often happens, however, that loss of weight is one of the earliest noticeable signs of some bodily disease. For example, in elderly patients it may be the first indication of malignant disease, such as cancer, and, in younger people, of

phthisis. Loss of weight may also be caused by failure to obtain sufficient nourishment, as a result of digestive disorder, or because the food is of unsuitable quality or deficient in quantity. Sometimes mental patients persistently refuse to take enough food and consequently lose weight. Loss of weight is very frequently observed in excited and restless patients and also in the final stage of general paralysis.

**Sleeplessness.**—Sleeplessness, or insomnia, may occur in any form of bodily disease and is common in mental disorder.

People in good health require a certain amount of sleep and, during illness, mental or physical, it is specially important that the patient should obtain sufficient rest and sleep.

The amount of sleep necessary for adults varies from six to eight hours in the twenty-four; young children need a longer time while less is often sufficient for the old.

During sleep consciousness is lost, the heart beats less frequently, the respirations are slower, and there is a more rapid loss of heat from the surface of the body as a result of dilation of the blood vessels of the skin and an increase in the secretion of sweat.

In cases of illness, the nurse should keep an accurate record of the number of hours of sleep obtained by the patient and should report whether the sleep was tranquil or disturbed.

If hypnotics are prescribed, the nurse should observe their effects, and the duration and nature of the sleep obtained should be noted.

**Delirium.**—This is a state of impaired consciousness in which the patient is not fully aware of his surroundings; it is often accompanied by hallucinations, usually of sight. Delirium varies in degree from states of slight confusion to a condition in which the patient is restless, noisy and violent. It occurs in certain forms of mental disorder and in bodily diseases associated with high fever.

Delirious patients should be constantly watched, as they often attempt to get out of bed and may injure themselves.

**Coma.**—This is a condition in which a patient is profoundly unconscious. It sometimes follows a state of delirium ; it may also occur in certain diseases such as diabetes and uraemia or may follow head injury and apoplexy or poisoning by narcotic substances.

**Pain.**—The reaction to pain varies greatly in different individuals and, as the nurse is dependent to a large extent on the patient's description, it is not always easy to determine the actual severity of the pain, even in normal people. Naturally the difficulty is considerably greater in mental hospital work. It is essential when in doubt to give the sufferer the benefit of that doubt, and to assume that the pain complained of is as bad as the patient would have the nurse believe it to be. It is also important to remember that demented or confused patients may not complain of pain, although suffering severely.

Pain due to disease of certain organs or parts of the body may be felt in other parts, e.g., in hip joint disease pain may be felt in the knee, and in dyspepsia there may be pain in the back between the shoulders. The term *referred* pain is used to denote pain of this nature.

The main points to be ascertained with regard to pain are :—

- (1) *Character*—whether sharp, dull, throbbing, shooting, stabbing or gnawing.
- (2) *Situation*.
- (3) *Duration*—time of onset and whether continuous or intermittent.
- (4) *Severity*—the nurse, from her knowledge of the patient generally and from the patient's appearance and general behaviour, may be able to form her own opinion about the degree of pain present. She should also note under what circumstances the pain is relieved or made worse, e.g., by coughing as in pleurisy, by certain movements, or by weather changes as in rheumatism.



In attempting to estimate the severity of pain, the nurse should try to observe the patient without his knowledge or when his attention is distracted. No attempt should be made to assist the patient with words to describe the painful sensations, but an accurate record of the patient's *own* description should be taken and, if necessary, reported to the doctor.

**Headache.**—Headache is a common symptom. Although frequently it merely indicates the existence of some transient and minor disorder, it may also be an early symptom of serious disease. The nurse should always ascertain, when possible—

- (1) the *site* of the pain, i.e., whether it is on both sides of head, in what area, e.g., occipital, frontal, etc.
- (2) the *character* of the pain—sharp, throbbing, etc.
- (3) its *intensity*—whether severe or slight.
- (4) whether it is *continuous* or appears only at intervals.
- (5) whether it is associated with any other symptom.

The causes of headache are numerous. Perhaps the most common cause is some derangement of the alimentary system, e.g., constipation or some digestive disturbance. Eye strain is also a frequent cause. In diseases of various organs, such as kidney, liver or heart, there is often pain in the head, and any rise in temperature, whatever the cause, may be accompanied by headache.

Certain local conditions give rise to headache of a severe type, the more important of these being meningitis and tumour of the brain. In the latter case, headache is often accompanied by giddiness and vomiting.

## CHAPTER VI.

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### **SYMPTOMS AND SIGNS OF DISEASE—(Continued).**

TEMPERATURE—FEVER—RIGOR—PULSE—RESPIRATION.

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### **THE TEMPERATURE.**

#### **Fever.**

Fever, or pyrexia, is the term applied to the condition in which the body temperature rises above the normal level. Fever is usually caused by some poison or toxin in the body. It may be unattended by other symptoms, but is frequently accompanied by shivering, followed by a sensation of heat on the surface of the skin. Headache, vague pains in the back and limbs, thirst and loss of appetite are also symptoms which occur with pyrexia. As a rule the skin is hot and dry to the touch ; the pulse and respiration are rapid ; and the urine is small in quantity and highly coloured.

The mean temperature of the body in health is  $98.4^{\circ}\text{F}.$ , but there are variations during the course of the twenty-four hours. It is lowest, about  $97.6^{\circ}$ , in the early morning, gradually rises during the day to about  $98.6^{\circ}$  or even  $99^{\circ}$  in the evening, and falls during the night.

The following terms are used to denote different degrees of body temperature :—

|                  |  |
|------------------|--|
| Subnormal.....   | From $96^{\circ}$ to $97.6^{\circ}\text{F}.$ |
| Normal.....      | From $97.6^{\circ}$ to $99^{\circ}\text{F}.$ |
| Slight Fever.... | From $99^{\circ}$ to $101^{\circ}\text{F}.$  |
| Moderate Fever   | From $101^{\circ}$ to $103^{\circ}\text{F}.$ |
| High Fever....   | From $103^{\circ}$ to $106^{\circ}\text{F}.$ |
| Hyperpyrexia..   | Above $106^{\circ}\text{F}.$                 |

In states of collapse the temperature may fall below  $96^{\circ}\text{F}.$

A temperature below  $95^{\circ}\text{F}$ . or above  $108^{\circ}\text{F}$ ., if prolonged, is generally followed by death. Sometimes, as death approaches, the temperature may become high, reaching  $110^{\circ}\text{F}$ . or more. In sunstroke the temperature may rise as high as  $112^{\circ}\text{F}$ .

During the convalescent stage of diseases such as typhoid fever and pneumonia, the temperature may remain subnormal for some days. A sudden fall in temperature may occur in shock or haemorrhage.

**Stages of Fever.**—In every attack of fever there are three stages :—

- (1) Onset, or rise of the fever.
- (2) Acme, or height of the fever.
- (3) Decline, or fall of the fever.

The stage of onset may be gradual, as in typhoid fever, or sudden, as in scarlet fever. A rapid onset is usually accompanied by a rigor or shivering attack. During the days following the onset, the temperature generally rises until the acme is reached. The decline may be gradual, the temperature

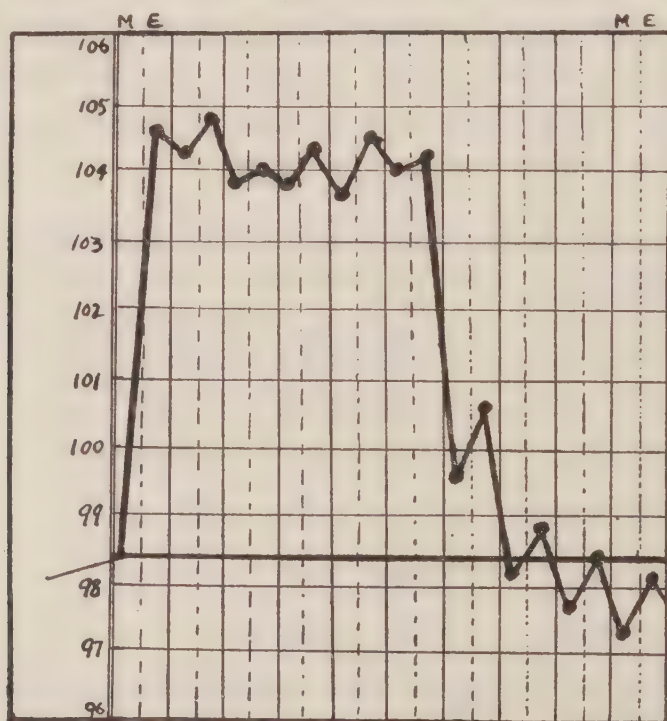


FIG. 4.—STAGES OF FEVER: SUDDEN ONSET, DECLINE BY CRISIS.



taking several days to come down to normal, or the fall may occur suddenly. A gradual decline is called a fall by **lysis**. A sudden termination is known as a fall by **crisis**.

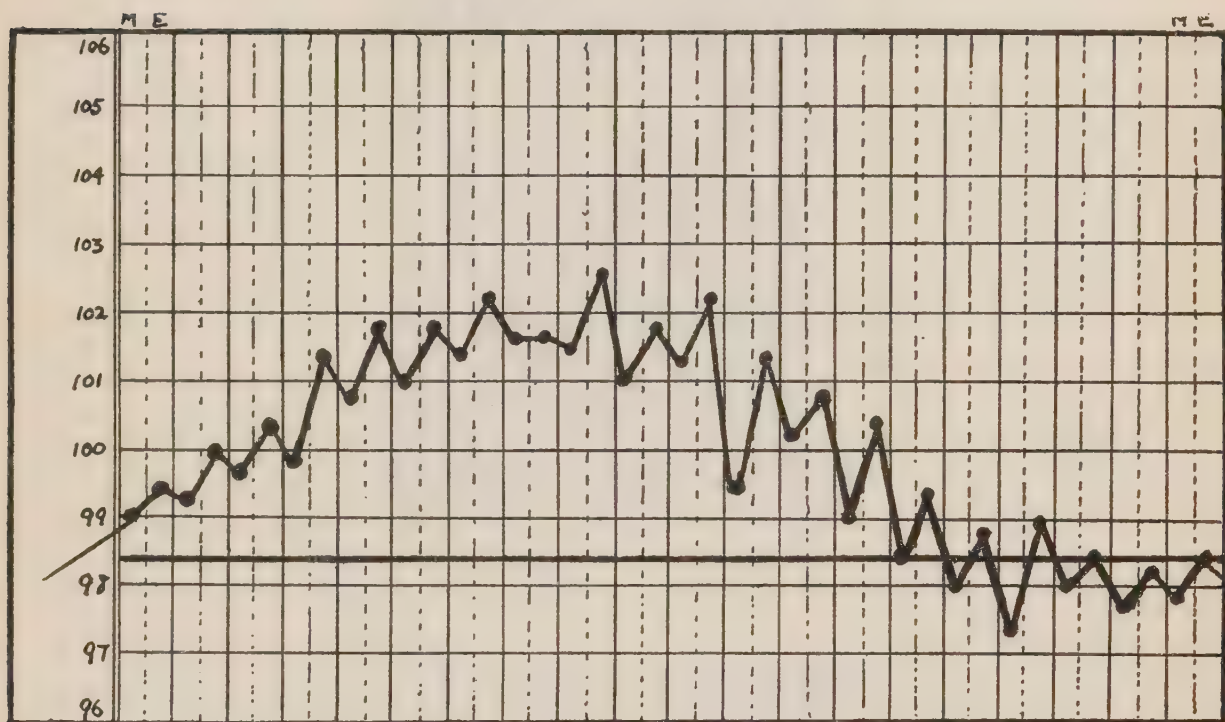


FIG. 5.—STAGES OF FEVER: GRADUAL ONSET, DECLINE BY LYSIS.

**Types of Fever.**—There are three types of pyrexia which will be more clearly understood by reference to Figures 6, 7 and 8.

(1) *Continued Fever.*—In this type the temperature remains above normal for a considerable time, does not return to normal during this period, and does not vary more than a degree and a half during the twenty-four hours.

(2) *Remittent Fever.*—In this the daily variation exceeds two degrees, but the temperature remains constantly above normal.

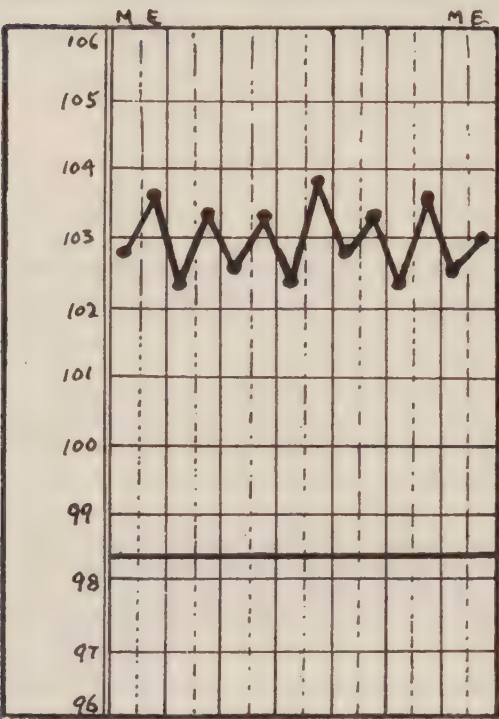


FIG. 6.—CONTINUED FEVER.

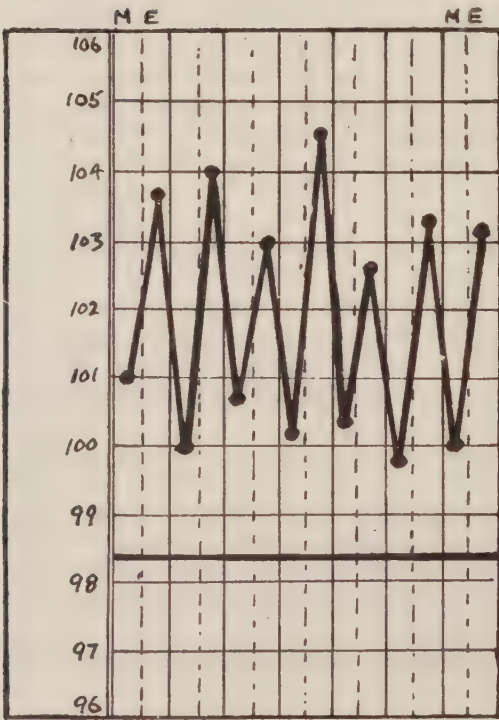


FIG. 7.—REMITTENT FEVER.

(3) *Intermittent Fever*.—In fever of this kind, the temperature is normal, or even sub-normal, at some time every day, and at times rises one or more degrees above normal.

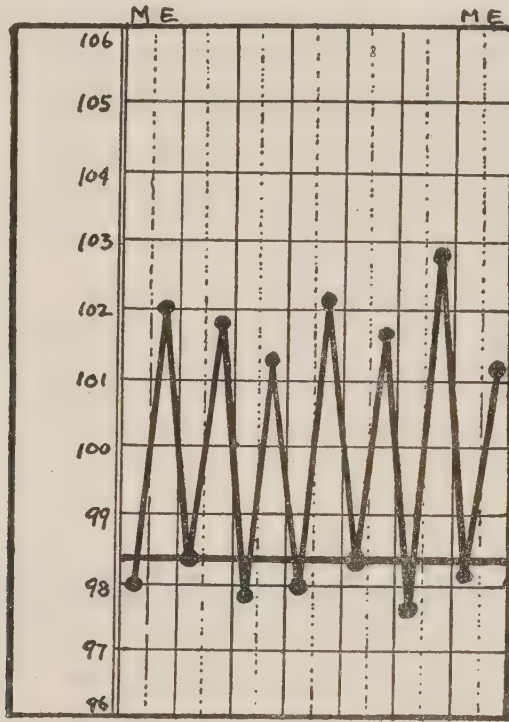


FIG. 8.—INTERMITTENT FEVER.

From the nursing point of view the following facts should be noted.

- (1) A rise in temperature of the body is a most important sign of disease.
- (2) For each degree of the rise in temperature the pulse rate in adults usually increases by approximately 10 a minute.
- (3) A gradual rise in temperature is suggestive of typhoid fever and a sudden rise may indicate the onset of one of the other specific fevers or of pneumonia.
- (4) A rise in temperature during the period of decline often indicates a relapse or complications of the disease.
- (5) A sudden fall in temperature, apart from an expected fall by crisis, may indicate serious complications.



**Rigor.**

A rigor is a shivering attack accompanied by a rapid rise in temperature. Rigors vary in severity from a mere chilly feeling down the spine to a condition in which the patient trembles violently and looks pinched and blue. In childhood rigors are sometimes replaced by convulsions. If the temperature is taken during this stage when the patient both appears and feels cold, it will be found to be considerably above normal. This is known as the *cold stage*, and is followed some time afterwards by a *hot stage*, during which the patient may complain of feeling extremely warm. The hot stage may be followed by a *sweating stage* during which the patient perspires freely. The sweating is accompanied by a reduction in temperature, and sometimes by considerable exhaustion.

The occurrence of a rigor in a person who has previously been well usually indicates the onset of some acute illness, such as influenza or pneumonia. Severe rigors usually precede attacks of fever in those who suffer from malaria. A rigor may also be a sign of the onset of some septic condition, e.g., an abscess.

Hysterical patients may be subject to attacks of shivering resembling a true rigor. Such attacks are not accompanied by a rise in temperature.

If a patient has a rigor, the temperature must first be ascertained and, if it is above normal, the patient must be put to bed between warm blankets with hot bottles at his feet. Additional bed-clothing and hot drinks may assist in inducing perspiration.

**Taking the Temperature.**

The temperature of the body is measured by the **clinical thermometer**. This instrument consists of a closed glass tube with a dilated part, the bulb, containing mercury at one end and a stem through which a minute canal runs. The cavity of the bulb communicates with the canal in the stem and, when the mercury is heated, it expands and rises in the canal. The stem is graduated and marked with figures and black lines to indicate the degrees of temperature from 95° to 110° or

115°F., and there are four finer lines dividing the spaces between the degrees, each of these divisions representing 0·2. or 2/10 part of a degree. The normal temperature, 98·4°F., is denoted by an arrow.

A clinical thermometer differs from an ordinary one in that it is so constructed that the column of mercury in the stem remains at the same level after it has risen and does not sink when the instrument cools, unless it is forcibly shaken down again into the bulb. Thermometers vary as regards the length of time they take to register a temperature, some requiring only half a minute and others three minutes or longer. The time is usually marked on the instrument but, to ensure an accurate reading, it is advisable that the thermometer should be left in position for rather longer than the period specified.

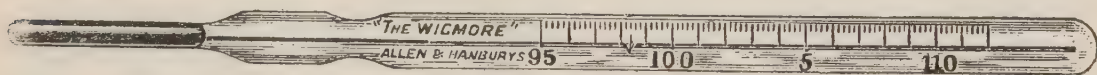


FIG. 9.—CLINICAL THERMOMETER.

Before the temperature is taken, the thermometer should be wiped dry and the top of the stem should be held firmly between the thumb and forefinger and the mercury remaining in the stem shaken down by jerking movements of the hand, until it is at the 95° mark. A thermometer is a fragile and expensive instrument and the nurse should be careful not to knock it against pieces of furniture or other projecting articles when shaking the mercury down. After use the mercury should always be shaken down and the thermometer washed in cold water or disinfectant lotion. When not in use it should be kept in its case or in a small glass vase containing disinfectant solution as previously described on page 18.

The patient's temperature may be taken twice daily, usually at fixed times in the morning and evening in mild or chronic cases; in acute illnesses, and when the temperature is high or fluctuating, it should be taken more frequently, i.e., every four or two hours as directed. It should be taken as a rule before the patient is washed or not sooner than an hour after washing. The temperature registered should be recorded on the temperature chart.

The temperature may be taken in the axilla, groin, mouth or rectum.

(1) **In the Axilla.**—The armpit should be dried and the bulb of the thermometer placed in the middle of the axilla and kept in position by holding the patient's arm across his chest with the hand on the opposite shoulder. The thermometer should be left in position for five minutes. The instrument must be in close contact with the skin. This method is often inaccurate with patients who are emaciated.

(2) **In the Groin.**—The part is dried and the bulb of the thermometer placed in the fold of the groin and held in position by flexing the thigh on the abdomen. This method is sometimes used in the case of infants or young children or when the axilla cannot be used.

(3) **In the Mouth.**—This method is reliable and accurate, but it should not be used, as a rule, in cases of mental disorder or deficiency or when the patient is delirious, unconscious, or suffering from severe exhaustion or difficulty in breathing, as there is a risk of such patients biting the instrument and swallowing the broken fragments. For the same reason it is an unsuitable method for young children. The temperature should also not be taken by the mouth until some time has elapsed after the patient has had a hot or a cold drink.

The thermometer should be washed and placed obliquely with the bulb under the patient's tongue on one side of the floor of the mouth. It must be held in position by the lips and not by the teeth, and the patient should be told to breathe through the nose and not to attempt to speak until the instrument has been removed. The temperature registered in the mouth is usually slightly higher than in the axilla or groin.

(4) **In the Rectum.**—This method gives an accurate reading, but the temperature is usually from half to one degree higher than when taken in other places. It is a suitable method for young children and unconscious patients and in cases where there is persistent cough. The bulb is lubricated with vaseline, gently inserted through the anus about two inches into the



rectum, and held in position for the required period. The thermometer should be well washed and disinfected after use and a separate instrument may be kept for this method.

A special form of clinical thermometer with a stronger bulb may be used for taking the temperature in the rectum on account of the injury which might result from the instrument breaking, an accident which is liable to occur if the patient is restless and resistive.

### **THE PULSE.**

When the left ventricle of the heart contracts, a quantity of blood is discharged into the aorta and through the arteries of the body ; the wave of blood distends the arteries momentarily as it passes along them, and this recurrent distension of the vessels is called the pulse. Pulsation occurs in all the arteries and can be easily felt in places where the vessel is near the surface and situated over a bone.

The most convenient place to feel the pulse is where the radial artery lies in front of the radius at the wrist. The pulse may also be taken at the temporal artery in front of the ear, or at the facial artery about two fingers breadth in front of the angle of the jaw.

The examination of the pulse gives information as to the condition of the heart and arteries and the state of the circulation. The normal pulse is regular in rhythm, its rate is about 72 a minute, and the successive beats are equal in strength.

### **Taking the Pulse.**

In order to examine or take the pulse, the nurse should stand or sit in front or at the side of the patient and place the tips of the first three fingers over the radial artery at the front of the wrist which is supported in an easy position by placing the thumb behind it. The beats should be counted for one minute by means of a watch with a second hand or a minute sand glass may be used for this purpose.

### Character of the Pulse.

The points to be observed with regard to the character of the pulse are chiefly :—

- (1) The rate.
- (2) The rhythm or regularity.
- (3) The strength.
- (4) The tension.
- (5) The condition of the artery.

(1) **The Rate.**—The average rate of the pulse in a healthy adult is about 72 beats a minute, but a rate between 60 and 84 may be regarded as normal. The rate varies to some extent according to the age, posture and sex of the individual. In a newly born infant the rate is about 140 a minute, and at the age of six years it is about 100. Posture also influences the frequency ; if 72 is taken as normal for a person sitting, the rate may rise to 80 when standing and fall to about 64 when lying down. The rate in women is usually slightly higher than in men. Exercise increases the rate temporarily and emotional excitement and alcohol also tend to quicken the pulse.

Increase in the rate (**tachycardia**) occurs in fever and some forms of heart disease, and the pulse may become rapid in states of exhaustion. Diminution in the rate (**bradycardia**) occurs in cases of tumour or compression of the brain, in jaundice, uraemia, some forms of heart disease, and during convalescence from the acute fevers.

(2) **The Rhythm or Regularity.**—The intervals between successive beats of the pulse should normally be of uniform or equal duration. When the intervals are unequal, the pulse is described as **irregular**. One form of irregularity is the **intermittent pulse** ; in this several successive beats occur regularly for a while and then there is a longer interval, after which the beats become regular again for a time until another beat is missed and a similar interval occurs. The intervals may occur regularly, e.g., every third or fourth beat and may

be of uniform duration. This condition may be a sign of serious disease of the heart, but it is also observed in the absence of organic disease and may be of little importance.

In other forms of irregularity, no uniformity can be observed and long and short intervals follow one another in no order and often in rapid succession.

Irregularity may be associated with a rapid pulse rate and, in some conditions, particularly diseases of the heart, also with variation in the tension and strength of the pulse.

(3) **The Strength.**—This depends on the force of the heart beat, the volume of blood and the amount of expansion in the artery during a beat. In some conditions there may be variations in the strength of successive beats, e.g., a strong beat may be followed by a weak one. When the beats are uniformly strong, the pulse is described as **full or bounding**, and, when they are so weak that they can scarcely be felt, it is called **thready**, a condition which is often a sign of severe prostration.

(4) **The Tension.**—In states of high blood pressure, it may be difficult to obliterate the beats by compressing the artery with the fingers and in such cases the pulse is termed a hard or high tension one.

(5) **The Condition of the Artery.**—The condition of the arterial walls can be felt by flattening the vessel against the bone with the fingers. A healthy artery is soft and compressible and can scarcely be felt, but, in the condition called arteriosclerosis, its walls are thickened, the vessel feels rigid and hard and its course may be tortuous or twisted. In atheroma, hard calcified deposits may be felt in the walls.

## THE RESPIRATIONS.

The chief points to be observed by the nurse in connection with the respirations are the rate of respiration, i.e., the number of times the patient inspires or expires in one minute, and the various abnormal types of breathing.



The normal rate in a healthy adult is from 16 to 20 respirations a minute; in an infant at birth, the rate is about 40 a minute and it is 25 in a child five years old.

The respirations become quicker during active exercise and the rate is also increased in fevers, in diseases of the heart or lungs and in any condition in which there is defective aeration of the blood. The rate may also be more rapid in cases where the breathing is shallow, because of pain associated with respiratory movements, as in pleurisy and peritonitis. In some cases of brain disease and in states of coma, the respirations are slower than normal.

In health the ratio between the respiration and pulse rate is about 1 to 4, i.e., with a respiration rate of 18 the pulse rate is 72. In pneumonia the ratio may be 1 to 2, or even 1 to 1, i.e., the respiration rate may be 60 or more with a pulse rate of 120.

### **Counting the Respirations.**

When the respirations are being counted, it is important that the patient should not be aware of what is being done as, otherwise, the rate may be involuntarily increased. In order to avoid this, the best method is for the nurse to continue to hold the patient's wrist, as if still taking the pulse, while counting the number of movements of the chest during a period of one minute. This is done by observing the rise of the chest and bedclothing or by counting the number of times the nostrils dilate. With some patients, particularly children, it may be difficult to count the movements unless the nurse's hand is placed lightly on the chest.

### **Types of Respiration.**

The following abnormal types of breathing may be observed in disease :—

**Dyspnoea**, or difficult breathing, is a common symptom in diseases of the respiratory system, and of the heart, and it is often accompanied by noises during the passage of air along the respiratory tract.

**Orthopnoea** is the term applied to the form of dyspnoea in which the patient cannot breathe in a recumbent position and has to be propped up in bed.

**Cheyne Stokes respiration** is a form of breathing which may be seen in some diseases of the brain or heart and in uraemia, sunstroke and some cases of poisoning. It is usually an indication of a grave condition and, when pronounced and persistent, is often a sign of approaching death. It is characterised by what has been termed a tidal type of breathing; the respirations begin quietly but successive respirations become gradually deeper and deeper until a maximum is reached, after which they gradually become shallower and ultimately cease for a few seconds. After this pause they begin to get deeper again and the cycle is repeated.

**Stridor**, or stridulous breathing, is the term applied to the whistling or hissing sound heard during inspiration when there is some obstruction in the air passages; it may be heard in laryngeal diphtheria, and in cases of impaction of a foreign body in the air passage, or of pressure on the trachea by a tumour, and in whooping cough when it is due to spasm of the glottis.

**Stertor** means the noisy breathing, resembling snoring, which occurs in states of unconsciousness; it is heard in apoplexy and during an epileptic fit.

**Sighing or yawning** breathing (air hunger) may occur in cases of internal haemorrhage, shock, collapse and diabetic coma, and indicates a grave condition.

In lung disease, such as bronchitis, **wheezing and crackling** sounds in the chest are heard; these are caused by the mucus which obstructs the passage of air in the bronchial tubes.

The breathing is described as **shallow** when the range of movement is less than normal.

Breathing may be chiefly thoracic in type, that is, carried out by the upper part of the thorax; this may be seen in cases of peritonitis. In pleurisy, the movements may be more or less limited to the abdomen because the pain tends to restrict movements of the thorax.

Mucus may obstruct the trachea and produce a rattling sound; this may be heard in cases of approaching death, when weakness and unconsciousness prevent expectoration—the so-called “death-rattle”.

In pleurisy and pneumonia, the patient may complain of severe pain, and note should be made of the site and nature of the pain and the stage of respiration at which it is most acute.

Deformities of the thorax, any bulging or shrinking of the chest wall, and any inequality in the expansion of the two sides should also be noted.



## CHAPTER VII.

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### **THE URINE AND FAECES.**

#### EXAMINATION OF URINE—URINE TESTING—EXAMINATION OF STOOLS.

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#### **EXAMINATION OF THE URINE.**

Normal urine is a clear yellow or amber-coloured liquid with a slightly acid reaction and a characteristic aromatic odour; its specific gravity or density, i.e., the weight of a quantity of urine compared with an equal volume of water, varies from 1,015 to 1,025, that of distilled water, as a standard, being taken as 1,000; it contains no deposits, except occasionally mucus in small quantities, and no abnormal constituents in solution, such as albumin, sugar, etc.

The average quantity of urine passed in twenty-four hours is about fifty ounces or two and a half pints, but the amount varies with the temperature of the air, the quantity of liquid consumed and other conditions, and quantities from two to four pints may be regarded as being within normal limits.

When a specimen of urine is required for examination, the urine bottle, bedpan, or other vessel into which the urine is passed by the patient, must be thoroughly washed and dried. A specimen glass, which is usually tall and conical in shape and must be quite clean, is filled with the urine to within one inch of its top, and the top of the glass is covered with a lid, or a piece of jaconet or paper may be tied over it and the patient's name and the date written on the paper.

The urine should be allowed to stand for a while before being examined in order that any suspended matter may settle at the bottom of the glass.

If a specimen free from contamination is required, particularly in the case of female patients, the urine is withdrawn by catheter and collected in a sterilised specimen glass.

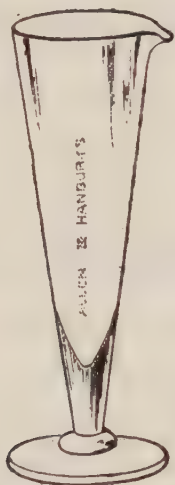


FIG. 10.—URINE SPECIMEN GLASS.

In some cases the nurse may be instructed to obtain a **twenty-four hour specimen** of urine. In order to collect this, an enamel bucket or other vessel of sufficient capacity and fitted with a lid is required. This vessel must be thoroughly clean and should be rinsed out with boiling water. The collection of the specimen is begun at a fixed hour. The patient should be told to pass urine at, say, 7 a.m., and the urine passed on this occasion should be discarded. Until the end of the period of twenty-four hours from this time, all the urine passed by the patient is collected and emptied into the bucket, the last quantity added being the urine passed at 7 a.m. the next day. It may be difficult to prevent some of the urine being lost with the stools but, to avoid this, the patient must be told to pass urine before having an action of the bowels. The urine collected is well stirred and the total amount is measured. Some of it is placed in a specimen glass for examination and testing. Note should be made of the number of times the patient passed urine during the twenty-four hours and whether any pain or difficulty was experienced in doing so.

**Urine Testing.**

The following apparatus and material are required for applying the various tests :—

|   |   |
|---|---|
| Test tube stand   | Tincture of guiacum.                          |
| Six test tubes (size 5 inches by $\frac{5}{8}$ of an inch). | Ozonic ether.                                 |
| Spirit lamp.  | Liquor potassae (solution of caustic potash). |
| Urinometer.   | Pure nitric acid.                             |
| Pipette.  | Solution of iodine.                           |
| Stirring rod.   | Fehling's solution, No. 1 and No. 2.          |
| Dilute acetic acid.   |   |

A solution of salicyl-sulphonic acid may also be included.

The examination may be divided into two parts, physical and chemical. The physical examination consists of observations with regard to the quantity, transparency, colour, odour, specific gravity and the nature of any visible deposits. The chemical examination consists of tests to determine the reaction of the urine and the presence or absence of any abnormal constituents in solution.

**Physical Examination.**

**Quantity.**—The total quantity of urine passed during twenty-four hours may be found by measuring the amounts every time urine is passed and adding them together at the end of the period.

It may also be determined by collecting a twenty-four hour specimen as described above. The quantity is increased in diabetes, some forms of chronic kidney disease and, occasionally, in hysterical attacks; it is diminished in acute kidney disease, fevers and when there is diarrhoea and vomiting.

**Transparency.**—The urine may be cloudy from the presence of deposits, such as mucus floating in it, and small quantities of blood give the urine an opalescent appearance.

**Colour.**—Urine is pale and may be colourless like water when large quantities are being passed; it becomes more highly coloured than normal when the quantity is diminished



and the urine is concentrated. Blood in small amounts gives a dark smoky appearance to the urine and larger amounts produce a red colour. Urine containing bile has a dark green or orange colour and often a frothy appearance. Certain drugs change the colour of urine, e.g., carbolic acid gives it an olive green, and methylene blue a bright blue colour.

**Odour.**—An ammoniacal odour may be noticed in urine which has stood for some time and in alkaline urine from cases of cystitis. The smell of diabetic urine has been said to resemble that of new mown hay, and acetone gives the urine a fruity smell. The odour may be faecal in cases where there is an abnormal communication between the intestine and the bladder. Turpentine imparts a scent resembling that of violets to the urine, and other drugs produce characteristic odours.



FIG. II.—URINOMETER.

**Specific Gravity.**—The specific gravity, or density, is measured by the urinometer. This instrument consists of a graduated stem with two bulbs at one end, a large one containing air and a smaller one underneath it containing mercury. The large empty bulb enables the instrument to float in a liquid and the weight of the mercury at the bottom keeps it in an upright position. The urine should be allowed to cool before the specific gravity is taken, and there should be a sufficient quantity of urine in the specimen glass to permit the urinometer to float freely in it. The urinometer is put in the urine and, when it has ceased to move and floats freely without touching the sides of the glass, the reading is taken. The

figure on the scale marked on the stem at the level of the surface of the urine gives the specific gravity and the reading should be taken with the eye at this level. The instrument should be washed after use and may be kept floating in a glass of water when not in use.

The specific gravity is low in some forms of chronic kidney disease or when the urine is dilute, and it is often much higher than normal in cases of diabetes.

**Deposits.**—When urine has stood for some time, a deposit may be seen at the bottom of the specimen glass. This may consist of mucus, phosphates, urates or pus.

*Mucus* has a woolly, cloudy appearance; it usually settles at the bottom of the glass, but may be suspended and float in the urine; it has a brownish tint if blood is present.

*Phosphates* form a white or colourless deposit which is flocculent and floats to the top when shaken; they dissolve on the addition of a few drops of acetic acid.

*Urates* form a red or yellow deposit and disappear when the urine is heated.

*Pus* has a white appearance like condensed milk; it may be mistaken for phosphates, but is not detached by shaking and is not dissolved by acetic acid.

### **Chemical Examination.**

The **reaction** is tested by dipping pieces of litmus paper in the urine. Blue litmus paper turns red when dipped in acid urine, and the red paper turns blue in alkaline urine. When no change in the colour of the paper occurs, the reaction is described as neutral. Urine is often alkaline in cases of cystitis and may be slightly alkaline after a meal, particularly one consisting largely of vegetables.

Albumin, sugar, blood, pus or bile may be present in the urine as **abnormal constituents**. If the urine is not clear, it should be filtered before applying the following tests for the detection of these substances.

**Tests for Albumin.**—(a) *The Heat Test.*—Fill a clean test tube with urine to within one or two inches of the top and heat the upper part of the liquid over the flame of a spirit lamp until it boils, leaving the lower part cool, in order that its appearance may be compared with that of the heated portion. If the heated part remains clear, no albumin is present. If a white cloud forms in the heated part, it consists either of phosphates or of albumin coagulated by heat. Add a few drops of acetic acid to the urine. If the cloud disappears it was due to phosphates which are dissolved by acids; if the cloud remains after addition of the acid it consists of albumin.

If the cloud formed on boiling is dense and heavy, indicating the presence of a large amount of albumin, all the urine in the tube may be boiled and the tube afterwards allowed to stand for some hours until the cloud has settled and formed a deposit in the lower part of the tube. The space occupied by the deposit roughly indicates the amount of albumin present and can be described as a half, a quarter, etc., of the total volume of urine in the tube.

(b) *Heller's Test.*—Pour some pure nitric acid into a test tube to a depth of about half an inch; then let a similar quantity of urine trickle down the side of the tube. If albumin is present, a white ring appears at the place where the acid and urine meet.

Nitric acid should be handled carefully, as it is a strong corrosive and burns the skin and articles with which it comes in contact.

(c) *The Salicyl-Sulphonic Test.*—This is one of the most reliable tests. A few drops of a saturated solution of salicyl-sulphonic acid are added to about one inch of urine in a test tube. If the urine remains clear, albumin is not present. If a white precipitate or opalescence appears, and this does not disappear on boiling the urine, albumin is present.

**Test for Sugar.**—*Fehling's Test.*—Pour about half an inch of Fehling's solution No. 1 and an equal quantity of solution No. 2 into a test tube; boil the mixed solutions to test their



freshness ; if the liquid remains clear it is regarded as satisfactory. Then add a few drops of urine to the mixture and boil again. If sugar is present in fairly large amounts, an orange red deposit forms. If no deposit forms, add about one inch of urine and boil again for two minutes. If the liquid remains clear after standing for a while, the urine contains no sugar.

**Test for Blood.**—Pour about one inch of the urine into a test tube and then add two drops of tincture of guiacum. Shake the mixture and then pour about one inch of ozonic ether slowly down the side of the tube. If blood is present, a blue ring will appear at the junction of the ozonic ether with the urine. Microscopic examination is necessary to prove the presence of blood corpuscles in urine.

**Tests for Pus.**—Pour the clear urine away or remove some of the deposit with a pipette and put some of the urine containing the deposit into a test tube ; then add solution of caustic potash ; if the deposit consists of pus, it will become thick and ropy.

Another test is to add tincture of guiacum to the urine ; if pus is present the mixture becomes green and this colour disappears on boiling.

The presence of pus can be definitely determined only by microscopic examination.

**Tests for Bile.**—(a) *Nitric Acid Test.*—Place a few drops of the urine on a white tile or dish and near them put a drop or two of nitric acid ; let the two liquids run together ; a play of green and other colours will be seen where the liquids meet if bile is present.

(b) *Iodine Test.*—Pour an alcoholic solution of iodine on the top of the urine in a test tube ; if bile is present a green layer will appear where the two liquids meet.

**EXAMINATION OF FAECES.**

In cases of diarrhoea and other diseases of the alimentary system, the nurse should examine the faeces or stools in order to enable her to furnish a report to the doctor on their characteristics ; in special cases, the stools should be kept for inspection by the doctor.

The stools may be large or small in amount ; they may be formed, loose or liquid. There may be alteration in colour ; in jaundice the stools are often pale or white, in diarrhoea with rapid peristalsis they may be greenish owing to the presence of bile pigment. Haemorrhage from the upper parts of the alimentary canal gives the faeces a black appearance (melaena) and the stools may also be blackened as the result of the administration of certain medicines such as iron and bismuth. The odour of the stools may be very offensive in some cases of diarrhoea and in jaundice. In constipation the stools are often dry and hard and consist of small lumps coated with mucus. In cases of tumour or obstruction in the bowel their shape may be altered and they may become flattened like ribbons or thin like pencils.

Abnormal constituents, such as undigested food, milk curds, gall stones, foreign bodies such as stones, segments of tape worm and other parasites, may be found in the faeces. The stools in typhoid fever are often liquid and yellowish in colour and have been described as " pea soup " stools.

In cholera they are watery and contain grey shreds of epithelium and mucus. Stools containing blood from the upper part of the alimentary canal have a dark, tarry appearance and an offensive odour ; when the blood comes from haemorrhage in the rectum or lower part of the bowel, as in dysentery and piles, the blood is red and in the latter condition sometimes forms red streaks on the surface of the stools. In dysentery the stools may be scanty and consist almost entirely of mucus and blood and, in some forms of colitis, large pieces of mucus are passed which sometimes form casts of the bowel.

## CHAPTER VIII.

### THE BLOOD AND CEREBRO-SPINAL FLUID.

#### EXAMINATION OF BLOOD—LUMBAR PUNCTURE.

##### Examination of Blood.

When a specimen of blood is required for bacteriological, serological or chemical examination, a vein is punctured with a hollow needle and the blood which escapes is collected in a tube, or a hypodermic syringe may be attached to the needle and used to aspirate or draw off the blood. In mental institutions, a specimen of the blood of recent cases is often required for the performance of the Wassermann test for the diagnosis of syphilis ; specimens may also be needed for the diagnosis of typhoid fever, malaria and other diseases.

The following articles, which must be sterile, are required : a hypodermic needle for inserting into the vein, tubes to collect the specimens, some swabs or gauze pads, dry gauze and clean towels ; a tourniquet, adhesive plaster, iodine solution and alcohol will also be needed.

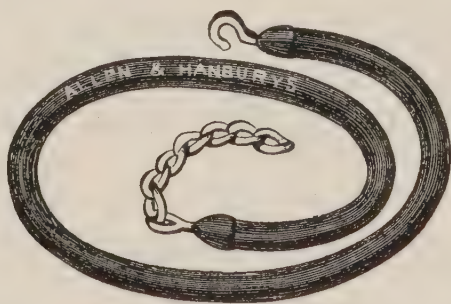


FIG. 12.—ELASTIC TOURNIQUET.

The tourniquet, or a piece of rubber tubing or a bandage, is applied round the lower third of the upper arm to distend the veins below it, and the limb is placed in an attitude of extension and supination with the forearm resting on a firm support. The skin over the front of the bend of the elbow is painted with iodine and washed with alcohol. The large veins in that situation should have become distended as a result of constriction by the tourniquet ; if they are not prominent, the



patient should be told to open and close his fist several times. The vein selected for puncture, usually the median basilic or median cephalic, is steadied by the forefinger of the left hand and the needle, with the bevel upwards, is inserted into its lumen. The blood which flows out is collected in the tubes and, when a sufficient quantity has been obtained, the tourniquet is removed and the needle withdrawn. A pad is pressed over the puncture for a few seconds, and a dressing of collodion, or of sterile gauze secured by adhesive plaster, is afterwards applied. The tubes containing the blood are corked, placed in an upright position, and prepared for despatch to the laboratory by attaching a label with the patient's name and registered number and the date.

A few drops of blood for microscopic examination or for diagnosis of typhoid fever and other infectious diseases may be obtained by pricking the finger.

### **Lumbar Puncture.**

The operation of lumbar puncture is performed in order to obtain a specimen of cerebro-spinal fluid for examination by the pathologist, particularly for the performance of the Wassermann test for the diagnosis of syphilitic disease of the central nervous system ; it is also done to relieve intracranial pressure, to measure the pressure of the fluid in the sub-arachnoid space and to introduce drugs or sera into the spinal canal.

The following instruments and articles will be required for the operation :—

Lumbar puncture needles, which must be in good condition and have sharp points ; a syringe, usually 5 c.c., for mounting on the needle in cases where an injection is to be made ; tubes, with corks or wool plugs, for the collection of specimens. Rubber gloves, iodine solution, alcohol, gauze, collodion and clean towels should also be available.

The various articles and dressings must be prepared and sterilised beforehand.

A solution of novocain or an ethyl chloride spray is sometimes used to produce anaesthesia of the skin.

The spinal canal is punctured from behind, usually in the space between the fourth and fifth lumbar vertebrae ; this is situated just below a horizontal line at the level of the highest borders of the iliac crests.

The patient is placed either lying on a bed or couch on his left side with the head bent and the thighs and knees flexed, or in a sitting posture on a low chair or stool with his body bent well forward and his arms crossed in front with the hands resting on the opposite shoulders. A nurse should support the patient and keep the body steady when the puncture is made. The area is surrounded with sterilised towels and the site of the puncture is painted with iodine solution and then rubbed with alcohol. The needle is inserted and, after it has entered the spinal canal, its stylet is removed and the cerebro-spinal fluid which trickles slowly out is collected in the test tubes ; the first few drops of fluid are usually discarded. The needle is withdrawn and the puncture sealed with collodion, or a dry gauze dressing is applied. Labels, giving the patient's name and registered number and the date, are pasted on the tubes which are despatched to the laboratory.

The patient should remain in bed for twenty-four hours afterwards and may suffer temporarily from headache or pain. The nurse should record the name of the doctor who performed the operation, the time, the quantity and colour of the fluid, and the subsequent condition of the patient.

The pressure of the fluid in the canal may be estimated by the force with which it is discharged, or it may be accurately measured by an instrument attached to the needle.

Intracranial pressure in meningitis and other conditions is sometimes relieved by allowing a quantity of the cerebro-spinal fluid to escape after lumbar puncture.

Vaccines and antitoxic sera, such as anti-meningococcic and anti-tetanic sera, may be introduced into the spinal canal either by gravity or by injection with a syringe after the withdrawal of an equivalent quantity of cerebro-spinal fluid.

Operations on the lower part of the body are sometimes performed under spinal anaesthesia, produced by the introduction of one of the various preparations of cocaine into the spinal canal. The parts supplied by the nerves whose roots are below the level of the injection become insensitive and paralysed.

Drugs have been introduced into the cerebro-spinal fluid in the treatment of disease of the central nervous system, e.g., salvarsan has been injected in the treatment of cerebral syphilis.



## CHAPTER IX.

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### CHARTS AND RECORDS.

A **temperature chart** is used to provide a continuous record in the form of a graph or curve of the variations in a patient's temperature from time to time. It consists of a printed sheet divided into squares by horizontal and vertical lines; the former provide spaces for the entry of the degree of temperature and the latter divide the form into columns for recording the time at which the temperature was taken.

Temperature charts are supplied in two forms, viz., morning and evening charts and four hour charts. The former provide for recording the temperature twice daily and the latter for an entry every four hours, usually at 2, 6, and 10 a.m. and 2, 6, and 10 p.m.

In addition to the record of the temperature, the charts provide for the entry of the patient's name, age, disease and other particulars and also for the recording of the pulse and respiration rates, the action of the bowels and the passing of urine. In some varieties of charts the pulse and respiration rates are shown in the form of a curve similar to the record of the temperature.

The recording of the temperature on the chart should be done neatly and accurately. A small dot is made in ink in the square corresponding to the degree of temperature and to the time when the temperature was taken, and the dots showing the variations of temperature from time to time are joined by ruled lines. The pulse and respiration rates are taken at the same time and entered on the chart in the appropriate column.

Short notes or signs to indicate any special symptoms, the administration of medicines, injections, etc., may also be made on the temperature chart.

In addition to the record given by the temperature chart, the nurse should keep a special report book for notes on cases of serious illness. These notes should record the quantity and variety of nourishment taken, the medicines or drugs given and their effects, the duration of sleep, the action of the bowels, the appearance of a rash or bed sore and other information with regard to the patient's condition and progress.

M & C CHART

DISEASE.

Name {

Age

Diet

Case Book No.

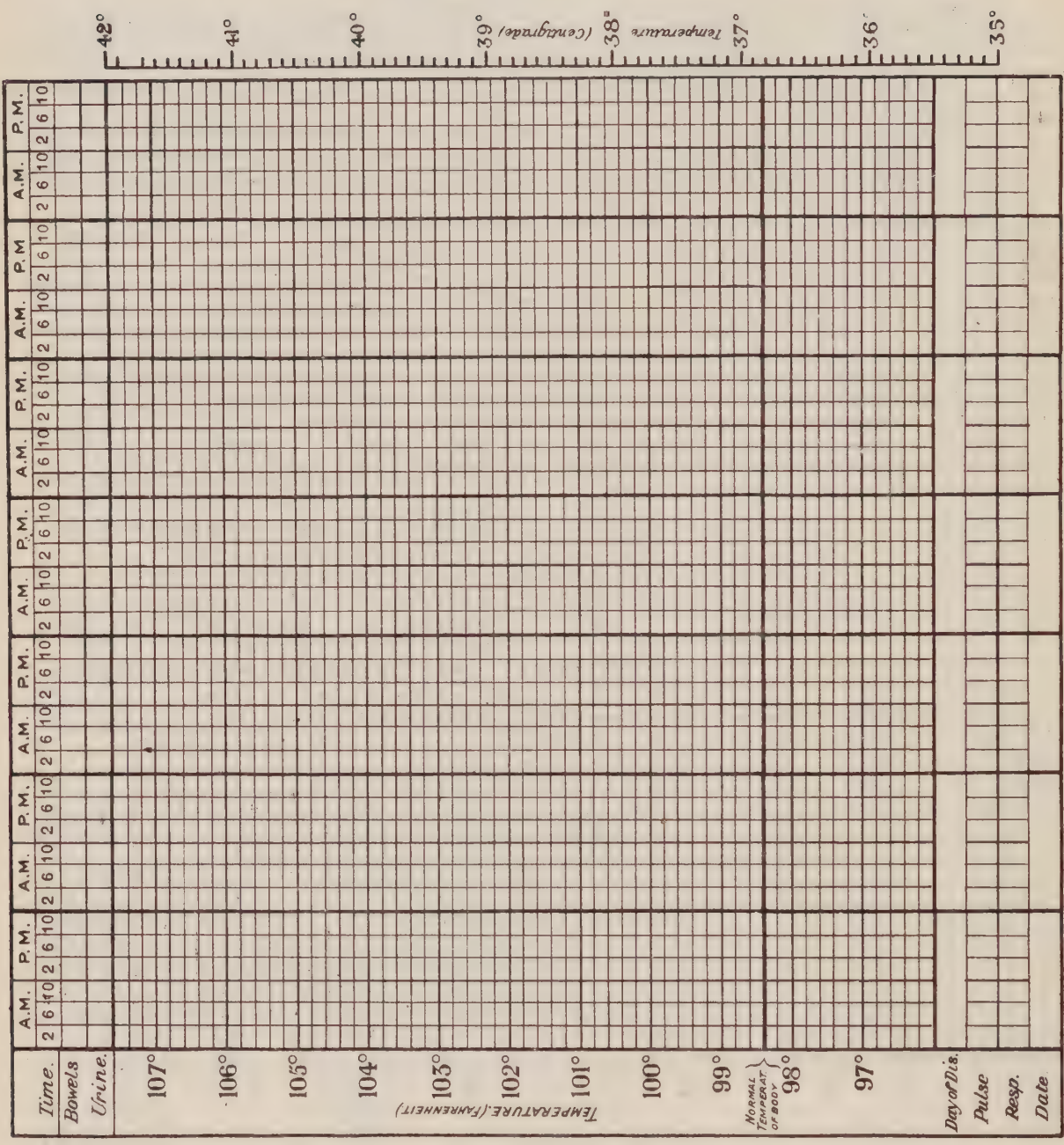
Notes of Case.

Date of admission

Result



G 92



**4 HOUR CHART.**

**DISEASE.**

**Date of admission**

**Result**

FIG. 13A.—TEMPERATURE CHART, FOUR-HOURLY.

## CHAPTER X.

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### THE FEEDING OF THE SICK.

DIETS—REFUSAL OF FOOD—FORCIBLE FEEDING—SICK  
ROOM COOKERY.

#### Diets.

The feeding of patients is an important part of their treatment, and invalid diets are planned and regulated with the object of supplying an adequate amount of nourishment without overtaxing the patient's digestive powers and with due regard to the nature of the illness from which he is suffering.

The nurse must see that the food is properly prepared and served and know how to administer it; she must adhere strictly to the doctor's instructions as to the kind and quantities of food to be given and give it punctually and regularly.

Food is needed to repair waste and supply energy and the abnormal conditions which are present in disease may necessitate alteration in the usual diet. Digestion is often weakened in states of illness and, in fevers, there is usually rapid and excessive waste. Certain kinds of food may be harmful in some diseases and, in others, the addition of special varieties of food is necessary for the treatment of the condition.

Food should be served in as attractive a manner as possible. A glass of milk may be made to look appetising if it is served in a perfectly clean glass and brought to the patient on a small tray covered with a clean cloth. The nurse should not place before a patient, on convalescent diet after recovery from a serious illness, a large tray with meat and vegetables piled on one plate and pudding on another, with thick slices of bread and a large cup of tea. The sight of such a large quantity of food served in such a manner often has the effect of removing all desire for food instead of stimulating the appetite. Only one course at a time, with a small quantity of the food properly arranged on the plate, should be served

on a tray covered with a clean cloth. When the patient has eaten the food, he should be asked if he would like to have another helping and, if not, the soiled utensils should be taken away and the next course served.

In some illnesses a diet limited to certain kinds of food becomes monotonous and distasteful, and the nurse may have to prepare the same food in a different way in order to induce the patient to take it.

Patients should have their hands washed before meals and the nurse who serves the food should wear a clean overall over her uniform and see that her hands and nails are clean.

Patients who are well enough to sit up for meals may be allowed to do so and pillows or a back rest should be arranged to support them. The bedside table, covered with a large napkin, should be placed in position, and the crockery and utensils properly arranged on it. The patient should be given a table napkin and his shoulders covered to prevent chilling. After the meal is finished the utensils should be removed and the patient and the bed tidied.

The quantity of food eaten should be noted and, if it is insufficient, the fact should be reported.

Food should not be kept in the dormitory and no cooking should be done in the ward except in the ward kitchen.

### **Diet Scales.**

These are lists showing the nature and quantities of food required for feeding patients in various conditions of health and disease. There are scales which are framed to meet the needs of persons in good health under average conditions and other scales which specify the food which should be provided for patients suffering from various forms of illness.

They may be classified as follows :—

**Full Diet.**—This is the ordinary diet for patients in good health. It consists of an adequate allowance of bread, meat, vegetables, puddings, fruit, tea, coffee, etc.



**Convalescent or Light Diet.**—This is a lighter diet consisting chiefly of easily digestible foods, such as milk, fish, chicken, eggs, custards, etc.

**Liquid Diet.**—This diet contains no solid food. It is given in fevers and cases of acute illness and consists of milk only, or of milk combined with beef tea or broths. Milk contains all the different forms of food and it forms the staple diet when only liquids are allowed. Three to four pints should be given during the twenty-four hours. Beef tea and broths are stimulating and contain mineral salts, but they possess comparatively little nourishment and cannot be used as substitutes for milk; as a rule, not more than about one pint should be given in the twenty-four hours. In diseases such as typhoid fever, where it is important that no solids should be given, it may be necessary to strain the liquids. Milk may be given undiluted or it may be mixed with soda water, barley water or lime water to make it more digestible. Water is particularly needed in states of fever, and, as a rule, the patient may be allowed to drink as much as he wants provided that he also takes a sufficient quantity of milk. If milk disagrees with the patient, or if it remains undigested and appears as curds in the stools, it may be necessary to peptonise it.

If there is any doubt as to its cleanliness and purity, milk should be pasteurised.

In order to prevent milk becoming sour, the jug or vessel in which it is contained must be perfectly clean and free from any trace of its previous contents and should be scalded before the fresh milk is poured into it. The vessel should be covered with a piece of gauze and placed in the refrigerator or ice chest. If such equipment is not available, milk may be kept cool by standing the vessel in a basin of water placed in the shade where there is a current of air, such as on a window sill or a shelf near a window.

Whey is sometimes used as a substitute for milk and albumen water may be given to patients who cannot take milk in any form.

In acute illnesses liquid food is given frequently and in small quantities. If three pints of milk daily are ordered, it should be given in amounts of five ounces every two hours.

As a general rule, a patient should not be wakened in order to take food at the proper time, but the nurse should use her discretion in this respect and should ask the doctor for explicit instructions if in doubt.

Patients who are acutely ill and are unable or are not allowed to feed themselves are usually put on liquid diet which is given by means of a **feeding cup**. The ordinary type of feeding cup holds about ten ounces of liquid and is graduated. It has a spout which is inserted into the mouth when food is given and thus prevents the food being spilled when the patient is lying in bed.



FIG. 14.—FEEDING CUP.

Another form, the “Ideal” drinking cup, has no spout but is designed so as to enable the patient to drink from it while in a recumbent position without spilling the contents.

When feeding a helpless patient, the nurse should place her left hand under the pillow and raise the pillow and the patient's head sufficiently to allow the liquid to be easily swallowed. A small towel or napkin should be placed under the patient's chin and the feed should be given slowly and sufficient time allowed for the patient to swallow one mouthful before another is given. The quantity given at each feed should be measured and noted.

If a feeding cup is not available the patient may be fed by **spoon**, and if it is essential that a patient should lie on his back, liquids may be given through a bent glass tube by siphonage. Patients who are on liquid diet should have their mouths washed out before and after taking food.



In addition to those patients who are fed by hand because of acute bodily illness, there are some cases of mental disorder and defect with whom this method of feeding has to be employed for various reasons. Among these are patients who bolt their food and are given soft food by spoon because of the danger of choking, patients who refuse to eat, general paralytics in the last stage who are helpless and have difficulty in swallowing, and cases of low grade mental deficiency who are incapable of feeding themselves. In these cases the food should be prepared and placed in a basin standing on a table or stool conveniently near the bed. A napkin is tucked in under the patient's chin. The nurse raises the patient's head with her left hand as described above and feeds the patient by means of a spoon held in her right hand. The feeding should not be hurried, and a spoonful of food should not be given until the patient has swallowed the previous one. If ordinary diet is given to such patients, the meat and bread should be cut up or minced and the potatoes and vegetables mashed.

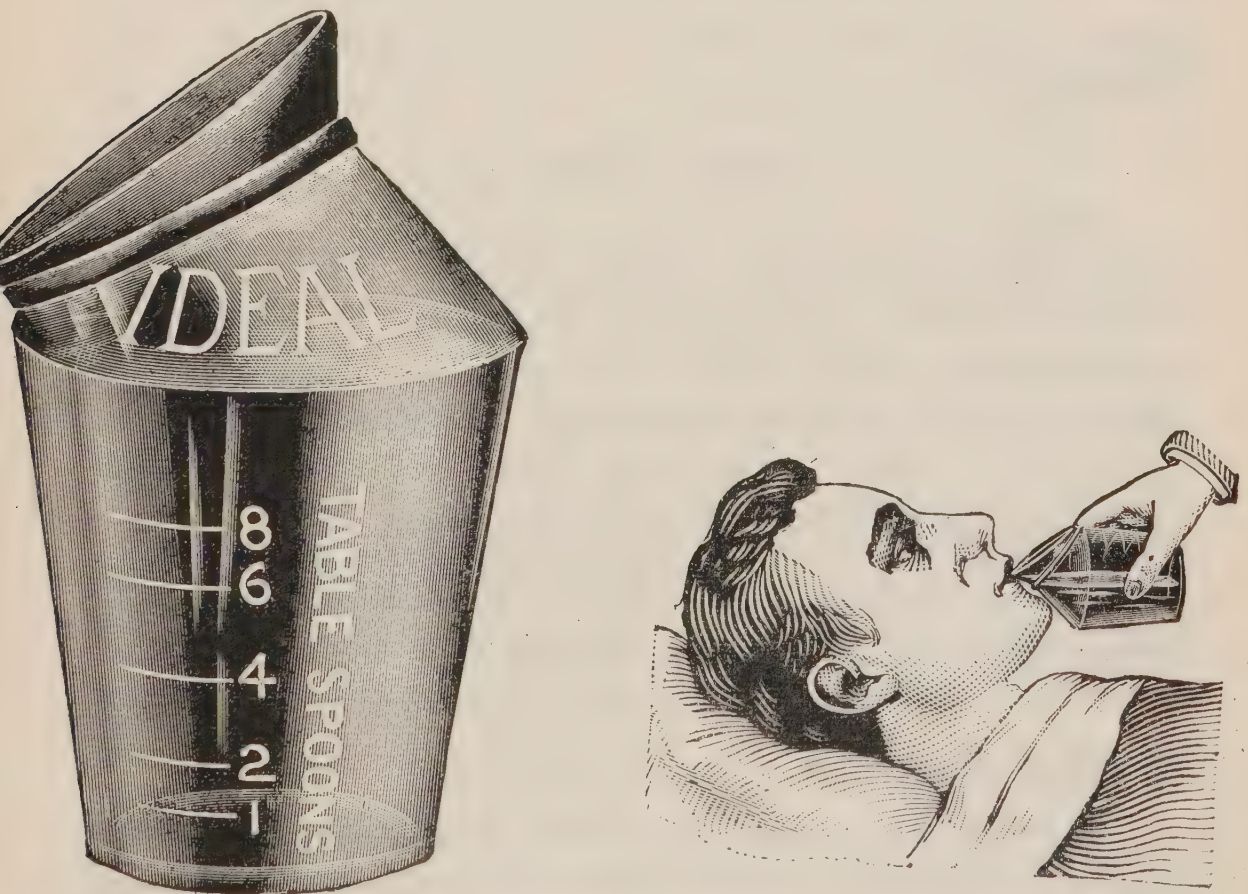


FIG. 15.—IDEAL FEEDING CUP.



**Medical Extras.**—Patients who are in poor health, and those who have lost weight, may be ordered extra food in addition to the ordinary or full diet. The nurse should see that the patient receives these extras, and she should direct the doctor's attention to patients who refuse or waste the extra food, and to those whose condition appears to have improved so much that the continuance of the extras is no longer necessary.

**Special Diets.**—These are prescribed for the treatment of certain diseases such as diabetes, dyspepsia, kidney disease, gout, anaemia, etc. In diabetes, the body cannot make use of sugar, and it is necessary to reduce the amount of foodstuffs containing sugar and starches. In dropsy, a diet free from salt may be prescribed. Liver, prepared in various ways and in quantities of about six ounces daily, is used in the treatment of pernicious anaemia.

When special diets are ordered, the nurses should make a note as to the nature and quantities of the foods ordered or allowed and strictly adhere to the instructions for their administration.

### **Refusal of Food.**

Patients may refuse to eat because of delusions, e.g., they may imagine that the food contains poison or that they are not entitled to food and are depriving others. In some cases of stupor with negativism they may refuse food for no apparent reason. Suicidal patients may refuse food with the intention of starving to death. The nurse should use tact in dealing with such cases and endeavour to persuade the patient to eat. Every case of refusal of food should be reported to the doctor and the report should state the quantity and the kind of food, if any, which the patient has taken during the day and the immediately preceding days.

### **Forcible Feeding.**

If patients cannot be persuaded to eat, and persist in refusing food, it will become necessary to resort to forcible feeding.

**Spoon Feeding.**—In the first instance an attempt should be made to feed the patient by spoon. The food is prepared and the nurse introduces a spoonful into the mouth through an opening made by inserting a finger and gently pulling the cheek away from the teeth. The finger must be kept in position until the food is swallowed and, if the patient attempts to spit it out, his nostrils may be lightly compressed in order to compel him to open his mouth to breathe. This may make the patient swallow the food, but the nostrils should be compressed for only a short time and the nurse must be careful not to hurt the patient. In some cases, with care and patience, a fair amount of nourishment may be given by this method.

**Tube Feeding.**—When forcible feeding by spoon has been unsuccessful, it is necessary to feed the patient by means of a rubber tube which is passed through the mouth or nose into the stomach. This operation is usually performed by the doctor. The following articles are required for feeding by tube and should be obtained and prepared for use before the doctor arrives in the ward :

(1) An oesophageal tube ; this should be sterilised. The size of the tube will depend on whether the patient is to be fed through the mouth or the nose and instructions on this point should be obtained.

(2) A glass or enamel funnel ; the nurse should satisfy herself that the spout of the funnel fits the tube and can be easily attached to it.

(3) A basin for the tube and other articles prepared for the feed.

(4) A gag, if the patient is to be fed through the mouth. A mouth opener may also be needed if the patient is resistive.

(5) A lubricant for the tube ; olive oil, glycerine, liquid paraffin or butter may be used for this purpose.

(6) A small quantity of sterilised water in a glass measure.

(7) A rubber sheet or a towel to place over the patient's neck and chest to prevent soiling of the clothing.

(8) A towel and a few wool swabs.

(9) The feed and any medicines which have been ordered to be given with it.

(10) A jug to contain the feed after preparation.

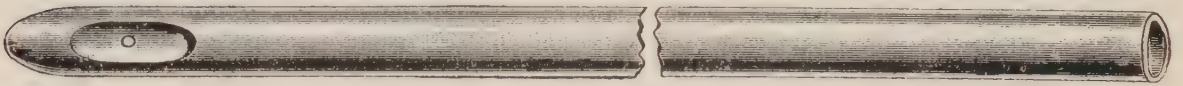


FIG. 16.—OESOPHAGEAL TUBE.

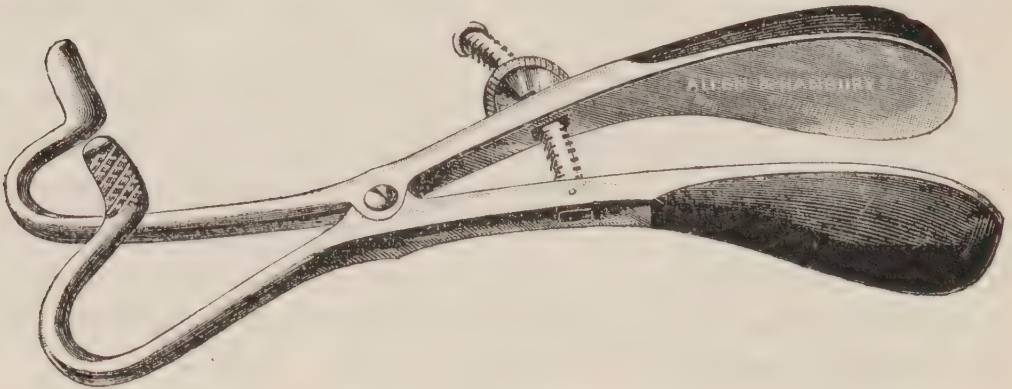


FIG. 17.—MOUTH GAG.

The feed usually consists of one to two pints of milk, one or two eggs and one tablespoonful of sugar. The milk should be warmed and sterilised if necessary. The eggs should be beaten up and then added to the milk, and the mixture stirred. They must not be added to the milk when it is boiling or hot, as the mixture would then be converted into custard which is more or less solid and would not pass through the tube. Beef tea or other liquid food preparations, brandy, and medicines may also be added to the feed if ordered. If castor oil is to be administered, it should be warmed in order to enable it to flow freely through the tube. The prepared feed is given at a temperature of about 100°F., and it may be kept warm until required by placing the jug containing it in a basin of hot water. A patient may be fed by tube either sitting up or in a recumbent position in bed or on the floor. The latter posture should be chosen if the patient is very resistive, as he is more easily controlled when lying down. The nurse should see that plenty of help is available, as a dangerous struggle may be



avoided and there is less risk of hurting the patient if a sufficient number of nurses are employed to control him. Five nurses may be needed. One nurse holds the head still, and keeps the gag in position when the patient is fed through the mouth, and one nurse should control each limb. The patient may also be restrained by means of a sheet folded lengthwise and passed over the knees, the ends being held by a nurse on each side, the upper limbs being controlled in a similar manner by a folded sheet passed over the chest and enclosing the arms above the elbows.

*Method of Administration.*—The tube is lubricated and introduced into the mouth, which is held open by the gag, or into one of the nostrils if the patient is being fed through the nose. The patient's head should be slightly flexed and must not be bent backwards in an extended position. The tube is passed through the mouth or nose into the pharynx.

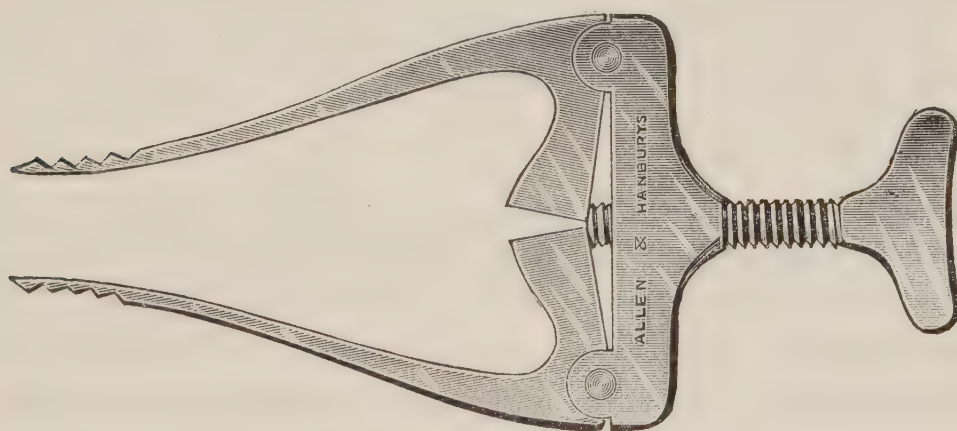


FIG. 18.—MOUTH OPENER.

A slight check to its progress will often be noticed when it reaches the upper end of the oesophagus. When this occurs, force should not be used to push the tube further down. If the pressure is momentarily relaxed until the patient is seen to swallow, the tube usually enters the oesophagus and can then be pressed gently downwards until it reaches the stomach.

Care should be taken to avoid kinking the tube and no undue force should be necessary in passing it. Occasionally the end of the tube enters the larynx and, if this happens,

the patient will show signs of distress and cough and choke violently. He may also become cyanosed and air may be heard passing in and out of the funnel. If this occurs, the tube must be immediately withdrawn and another attempt made to pass it into the oesophagus. After the tube has passed down the oesophagus and entered the stomach, the patient should be observed for a few moments to see if he is breathing normally and if his condition is satisfactory. In order to diminish the risk of food being introduced into the lungs as a result of the tube having entered the trachea, a small quantity of the sterilised water is first poured into the funnel to ascertain if the liquid flows freely and if the tube has passed into the stomach. The patient would show signs of distress and suffocation if the water entered the air passages and lungs, but, if the feed were poured into the lungs, the results might be fatal. If the water flows freely down the tube and causes no signs of choking, the feed is slowly poured into the funnel and passes into the stomach by gravitation. When all the feed has been given the tube is gently withdrawn, being pinched before removal to prevent any leakage of its contents into the larynx.

**Rectal Feeding.**—This method is used to supply nourishment when food cannot be given by the mouth, and it may be necessary to have recourse to it in cases of persistent vomiting or haematemesis, ulceration of the stomach, unconsciousness or severe shock. The food is usually administered in the form of a nutrient enema, and the method of administration is described in Chapter XII.

### **Sick-room Cookery.**

The nurse may be required to prepare special diets for sick patients and the following recipes give directions with regard to food which may be prepared or cooked in the ward kitchen.

**Albumen Water or Egg White Solution.**—Whisk up the whites of two fresh raw eggs, add them to one pint of cold boiled water in a bottle and shake the mixture.

Another method is to cut up the white of a raw egg with a clean pair of scissors and shake it up in a bottle with half a pint of cold boiled water. A pinch of salt or a little sugar may be added to the mixture.

**Arrowroot Pudding.**—Mix one dessertspoonful of arrowroot into a fine paste with a little cold water ; add to this half a pint of boiling milk stirring while doing so. Boil the mixture gently for two or three minutes, add sugar as required, and after removal from the fire brandy may be added if ordered.

**Barley Water.**—After washing the barley in several changes of water, put two ounces (four tablespoonfuls) in a jug and add a pint of boiling water ; allow to stand until cold and then strain. It may be flavoured by adding a tablespoonful of sugar, the rind of one lemon and the strained juice of half a lemon. Barley water is useful for diluting milk and making it more digestible.

**Beef Tea.**—Take one pound of lean beef, remove all fat and bone, cut the meat into small squares and place in an earthenware jar with a pint of cold water, add a pinch of salt. Place the covered jar in a saucepan of hot water and allow to simmer for about four hours without boiling ; strain through muslin and squeeze the fluid from the meat and allow to cool. The quantity usually given to patients is about five ounces or one teacupful.

**Peptonised Beef Tea.**—Add one third teaspoonful of bicarbonate of soda and the peptonising preparation to one pint of beef tea ; pour the mixture into a jar, cover the top of the jar and let it stand near the fire for about three hours. The liquid is then brought to the boil in a saucepan and afterwards allowed to cool.

**Raw Meat Juice.**—Finely scrape or mince half a pound of lean beef, cover with about two tablespoonfuls of cold water and allow to stand for two hours ; then place in a clean piece of muslin, squeeze the juice from the meat and put on ice. This does not keep fresh for longer than twelve hours, and should, therefore, be made in small quantities and used soon after having been prepared.



**Beef Jelly.**—Prepare ordinary beef tea and add one ounce of gelatine to each pint of the tea while hot. Allow to cool.

**Custard.**—For baked or steamed custard take one beaten-up egg, one quarter pint of hot milk, and a large teaspoonful of sugar, mix and strain into a greased dish. If to be baked, place the dish in a shallow pan of water, and the pan into a very moderate oven until the custard is set when tested with a knife. Serve hot or cold. The custard should on no account be allowed to boil.

For steamed custard strain the same mixture into a basin, and cover with buttered paper. Put into a pan of boiling water with a lid, and set at the side of the stove to cook for about half an hour. The water must not be allowed to boil again.

**Egg Flip.**—Beat up a new laid egg with a teaspoonful of sugar, add a pinch of salt. Add half a pint of cold or warm milk, and a tablespoonful of brandy. Stir and then strain into a tumbler.

**Pasteurised Milk.**—Heat milk until its temperature reaches 150° to 165° F. and keep it at that temperature for half an hour: then cool rapidly and store in a cool place. This process kills most of the disease germs which the milk may contain, but does not destroy the vitamins or alter the taste of the milk.

Another method which is quicker but not so reliable is to put the vessel containing the milk in a saucepan of cold water; heat until the water just boils, then remove the vessel of milk and allow the milk to cool.

**Peptonised Milk.**—This is prepared by adding about five ounces of cold water and the peptonising powder or liquid to one pint of milk and standing the vessel containing the mixture in a basin of hot water near a fire for about twenty minutes, shaking it at intervals. If the peptonising process is allowed to continue longer, the milk will become bitter and, in order to prevent this, it should be stopped after this period by bringing the milk to the boil for not longer than one minute. The milk should afterwards be kept in a cool place for use as

required. If the patient is being fed by means of nutrient enemata, the peptonisation may be allowed to continue for an hour or longer before the milk is boiled, as the milk will become more completely digested and its bitter taste does not matter. There are numerous proprietary preparations for peptonising food and the proportions of milk and powder and the methods of preparation vary in accordance with the particular agent used. Full directions for use are supplied with the various preparations and these should be followed in each case.

**Junket.**—Heat half a pint of fresh milk to 100° F. and stir in one teaspoonful of essence of rennet ; add sugar to taste and put in a warm place to set. Flavoured preparations of rennet may be used to make the junket more palatable.

**Whey.**—Junket is made as described above and, when the curd has formed, the liquid remaining is then strained off and boiled.

Whey may also be made by boiling one pint of milk with two teaspoonfuls of lemon juice. The curd which forms is strained through muslin and the whey pressed out.

**Imperial Drink.**—This consists of a pint of boiling water to which is added a teaspoonful of cream of tartar, the juice of half a lemon, and sugar to taste.

**Lemonade.**—Slice two lemons, add a pint of boiling water, and sugar to taste. Stir well and cool.

## CHAPTER XI.

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### **THE ADMINISTRATION OF MEDICINES.**

STORAGE—WEIGHTS AND MEASURES—METHODS OF ADMINISTRATION—SUBCUTANEOUS AND INTRAVENOUS INFUSIONS.

Medicines and other preparations for the treatment of patients are ordered by the doctor and supplied from the dispensary. Those prescribed for individual patients are labelled with the patient's name and directions for their use ; others which are supplied for emergency or general use in the ward, such as hypodermic tablets, stimulants, aperients and disinfectants, have labels stating the nature and, in some cases, the dose or strength of the preparation.

**Storage of Medicines.**—The rules for the safe custody of medicines must always be scrupulously observed. Every ward is equipped with a medicine cupboard. This must be kept locked and only the nurse in charge or her deputy should have possession of the key. A separate cupboard, or a special compartment of the medicine cupboard, is provided for poisons and applications for external use. Bottles which contain poison are labelled accordingly. They are also of a distinctive colour and shape, being blue or green in colour and hexagonal or triangular in shape, the glass at the sides usually having a ribbed surface. It should be remembered, however, that other drugs and medicines prescribed for internal administration may also be poisonous if taken in doses larger than those ordered, and that all medicines should be kept in safe custody and handled with the utmost care. Patients should not be allowed to have drugs or medicines of any kind in their possession, either those prescribed by the doctor, or others, such as headache powders or hypnotic tablets, given to them by visitors or in their possession at the time of their admission to the hospital.



When the use of a particular medicine has been discontinued, the empty or partly emptied bottle or container should be returned to the dispensary.

**Weights and Measures.**—In measuring drugs and medicines the terms commonly employed to designate quantities, i.e., the weight in the case of dry substances and the volume in the case of liquids, are those specified in the following tables. The metric system is also used in pharmacy and for scientific measurements. Domestic measures, e.g., a spoon or a glass, may be used, but the size of these utensils varies considerably and they are not accurate enough for measuring medicines.

**Liquids.**—60 minims = 1 drachm.

8 drachms = 1 ounce.

20 ounces = 1 pint.

2 pints = 1 quart.

4 quarts = 1 gallon.

**Solids.**—20 grains = 1 scruple.

3 scruples = 1 drachm.

8 drachms = 1 ounce.

16 ounces = 1 pound.

The corresponding domestic measures are as follows :—

1 minim = 1 measured drop.

1 fluid drachm = 1 teaspoonful.

2 fluid drachms = 1 dessertspoonful.

4 fluid drachms or half ounce = 1 tablespoonful.

2½ fluid ounces = 1 wineglassful.

10 ounces = 1 tumblerful.

A medicinal drop is the same as a minim, but should never be measured by dropping from a bottle, as such a drop varies in size according to the nature of the fluid ; a drop of an oily substance is larger than a drop of water or spirit. The graduated minim measure is used for measuring medicinal drops.

The commonly used measures according to the metric system and their approximate equivalents are:—

|                    |                            |
|--------------------|----------------------------|
| 1 gramme           | = 15½ grains.              |
| 1 kilogramme       | = 2 lb. 3¼ ozs.            |
| 1 cubic centimetre | = 17 minims.               |
| 1 litre            | = 1 pint 15¼ fluid ounces. |

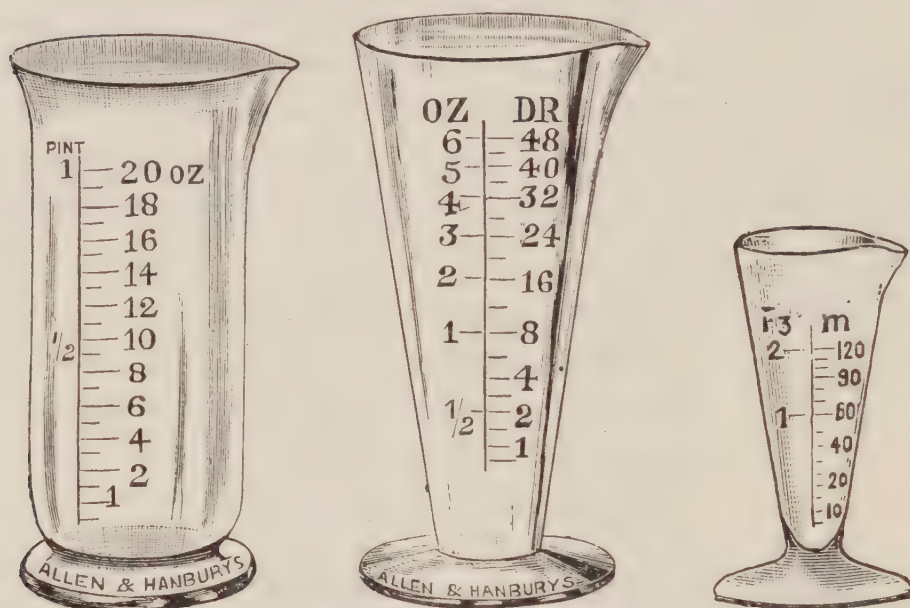


FIG. 19.—GLASS MEASURES.

### Administration of Medicines.

No medicines should be given to patients unless ordered by the doctor. The prescribed doses should be given regularly and punctually and their effects should be noted if possible. The nurse must immediately report any mistake which has occurred in the administration of a medicine.

Medicines may be prescribed to produce a local effect on the part to which they are applied, or they may be given for their general effect on the body or a particular system. Those which have a general action are absorbed by the blood and distributed to the various parts and organs of the body.

Certain medicines are given at particular times of the day and directions to this effect are shown on the label. Those ordered to be taken before meals are administered about ten minutes before the meal, and those to be taken after meals are given ten minutes afterwards, or later if so directed.

Saline aperients, such as epsom salts, which act quickly, are usually given in the early morning about an hour before breakfast and their action is helped if they are followed by a drink of tea or hot water. Other aperients and purgatives which take some hours to act, such as castor oil and various pills, are administered in the evening. Drugs which are prescribed for their general action on the body are usually most effective when given between meals on an empty stomach.

Drugs and medicines may be introduced into the body through the following channels:—

- |  |   |
|--|---|
| (1) Through the mouth and alimentary system      | By swallowing.  |
| (2) Through the skin.....                        | By inunction.   |
| (3) Through the lungs.....                       | By inhalation.  |
| (4) Through the subcutaneous or muscular tissues | By hypodermic or by intra-muscular injection.                     |
| (5) Directly into the blood...                   | By intravenous injection.   |
| (6) By the rectum.....                           | By injection into the bowel or by the insertion of suppositories. |
| (7) Directly into the cerebro-spinal fluid       | By lumbar puncture injection into the spinal canal.               |

#### (1) **Through the Mouth and Alimentary System.**

This method of administering drugs is the one most commonly used. Medicines may be given by the mouth either in liquid form, such as mixtures, oils and emulsions, or as solids, such as pills, powders, tablets, cachets, capsules and lozenges.

A **mixture**, popularly described as a “bottle of medicine”, consists of a liquid containing drugs in solution or suspension.



When a mixture is to be administered to a patient, the bottle should be carried on a tray together with a graduated medicine glass, a jug of water, a basin containing warm water and a clean glass cloth. Before the medicine is given the name and directions on the label must be carefully read and the bottle well shaken, the cork being held in position with the first finger. The cork is then removed and the dose of the mixture is poured into the medicine glass, the bottle being held with the label facing upwards in order to avoid soiling it; a piece of wool may afterwards be used to wipe any drops which may remain on the neck of the bottle.

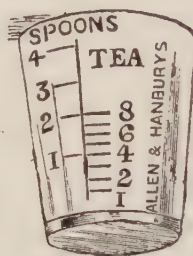


FIG. 20.—MEDICINE TUMBLER.

In measuring the dose the medicine glass should be held perfectly level and at the level of the nurse's eyes, so that the surface of the liquid and the graduation marks on the glass may be clearly seen and the dose accurately measured. The cork should then be replaced and the label read again before the dose is given. The dose may be diluted with water, if the directions state so. After the medicine has been given the glass must be washed and dried and the bottle placed in the medicine cupboard.

When mixtures have to be given to a number of patients at the same time, the bottles may be arranged together on the tray, the dose for each patient being given as described above.

Castor oil and some other oily substances have an unpleasant taste and their nauseous flavour may be disguised by the following method:—

Cut a lemon in half, squeeze some of the juice into a medicine glass previously warmed by immersion in hot water

and swill the juice round in the glass so as to wet the sides ; then pour the dose of oil on the centre of the juice and rub the cut surface of the lemon over the rim of the glass so that the juice flows down the inner and outer surfaces of the sides. Then give the patient one half of the lemon to suck for a few seconds. The contents of the medicine glass may then be swallowed, and it will be found that the lemon juice has effectively hidden the taste of the oil.

Insoluble drugs may be given by the mouth in the form of **pills or tablets**. These are placed on the tongue and swallowed with a drink of water, or they may be crushed and swallowed with a spoonful of jam.

**Powders** are given by shaking them on the back of the tongue and giving a drink of water to wash them down, or they may first be mixed with sugar or jam.

**Cachets** are small envelopes of rice or wafer paper. They are chiefly used for substances which have an unpleasant taste, such as quinine. They should be moistened with a little water before being placed in the mouth and swallowed.

**Capsules** are small globes made of gelatine. They are sometimes used to enclose nauseous drugs, such as castor oil, creosote and oil of male fern. They are swallowed like pills and, after reaching the stomach or intestines, the wall of the capsule dissolves and the drug is set free.

**Lozenges** are prescribed for their local effect on the mouth or throat and should be slowly sucked.

Whenever medicines in the form of pills, tablets, etc., are given, the nurse should satisfy herself that the pill has actually been swallowed, as cases have occurred in which the patient has retained it and gradually accumulated in his possession a number of pills sufficient to amount to a dangerous dose of the drug.

Patients often object to taking medicine, and tact and persuasion may be required to induce them to swallow it. Force should not be used to make a patient take the medicine, and the nurse should not attempt to deceive him by giving

drugs mixed with food, unless specially ordered to do so, as such a practice tends to make the patient suspicious and to encourage the development of delusions of persecution. If a patient refuses to take the medicine prescribed, the fact should be reported.

### (2) **Through the Skin by Inunction.**

The skin has powers of absorption, and this channel is sometimes used to administer certain drugs. The drug, usually in the form of an ointment, is rubbed on the surface of the skin by a method termed inunction, and is absorbed by the blood. Mercury is sometimes given in this way for the treatment of syphilis. The part is first washed and the ointment containing the mercury is rubbed on the skin until it is absorbed. The nurse may wear a rubber glove to prevent the drug being absorbed through her own skin, or the ointment may be rubbed in by the patient himself. In successive applications, different areas of the skin, usually the groins, axillae, abdomen and the inner surfaces of the arms and thighs, are used in rotation, and the treatment is discontinued during two days in every week.

Cod liver oil is sometimes administered to weakly children by inunction.

### (3) **Through the Lungs by Inhalation.**

In this method, the medicine in the form of a gas or vapour is inhaled and enters the lungs. **Anaesthetics**, such as chloroform and ether, are examples of drugs which are given in this way. They are absorbed by the blood in the lungs and produce a state of unconsciousness as a result of their action on the brain.

Oxygen is administered by inhalation in cases of heart and lung disease where there is defective aeration of the blood. It is usually given from a cylinder through a tube and a funnel which is placed near the face, or through a catheter passed into one of the nostrils. It is advisable to warm and moisten the oxygen by passing it through warm water.

Carbonic acid gas is sometimes used to stimulate respiration.



In angina pectoris, a form of heart disease, amyl nitrite is given as a restorative. It is supplied in glass capsules covered with cotton material; when an attack occurs, the capsule is broken and the escaping vapour is inhaled. In asthma, stramonium powder is ignited and the fumes are inhaled, or medicated cigarettes may be smoked. Creosote, eucalyptus and other drugs are sometimes given by inhalation in the treatment of phthisis.

**Steam Inhalations.**—Steam, or hot moist air, has a soothing effect on the inflamed mucous membrane of the air passages and is administered by inhalation either pure, or impregnated with various drugs in the treatment of laryngitis, bronchitis and other conditions.

Inhalations are administered by means of a bronchitis kettle or an inhaler. A jug with a towel wrapped round its top may also be used to give an inhalation; the patient places his mouth and nose over the jug against the towel and inhales the steam from the boiling water in the jug.

A bronchitis kettle is an ordinary light tin kettle having a long spout with a fish tail shaped end, which can be placed so that the steam from the boiling water in the kettle is discharged under a canopy or tent near the patient's head but not



FIG. 21.—BRONCHITIS KETTLE.

directly on to him. A tent may be improvised by stretching a blanket across the tops of two screens placed behind the bed. The water in the kettle is kept boiling by a spirit lamp or other means and should be replenished from time to time by adding boiling water in order to maintain a constant discharge of steam.

The steam may be medicated by passing it over a flat sponge soaked in the drug and inserted in a pocket at the end of the spout or by adding the drug to the water in the kettle. Compound tincture of benzoin (Friar's balsam), one teaspoonful to the pint of water, oil of eucalyptus, turpentine, and menthol are substances which are commonly used. A little light magnesia powder added to the water promotes the volatilisation of the drug.



FIG. 22.—INHALER.

An earthenware inhaler with a glass mouth piece is also used for inhalations. The inhaler is half filled with boiling water to which various drugs may be added, and is covered with a towel to retain the heat and to prevent the patient being burned. The patient holds his mouth over the mouth piece and inhales the steam.

#### (4) **Through the Subcutaneous Tissues.**

**Hypodermic Injection.**—Medicines are administered by hypodermic or subcutaneous injection when it is desired to produce a more rapid and certain action than would be obtained

if they were given by the mouth. They usually consist of minute doses of potent drugs, such as strychnine and morphia, and they must be carefully administered and the dose accurately measured.

Certain drugs used as **local anaesthetics**, such as cocaine or novocaine, may be injected through the skin or mucous membrane into the tissues at the site of an operation, in order to anaesthetise the region.

The drugs are supplied for hypodermic injection in the form of small tablets, but they may also be in the form of solutions of standard strength or of ampoules containing a dose of the drug in solution. They are introduced under the skin by means of a hypodermic syringe. This is a small graduated glass or metal syringe to which is attached a fine hollow needle, threaded with a piece of wire to keep the passage open. The

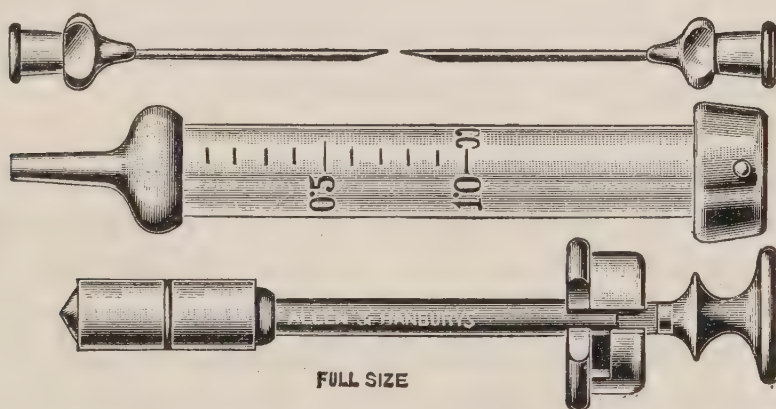


FIG. 23.—HYPODERMIC SYRINGE.

graduations, from 5 to 20 minims, or, according to the metric system, in tenths up to 1 c.c., are usually marked on the barrel, but in another form of syringe they are marked on the piston rod which is fitted with a small nut or screw which can be adjusted in order to measure the quantity of the solution to be injected.

The syringe must be sterilised before use, but before this is done, the nurse should satisfy herself that the needle is not blunt, that the instrument is in good working order and that the connections are tight. Some sterile water should be



drawn through the needle into the syringe and gently expelled. The piston should move smoothly and freely, and there should be no leakage at any of the connections or past the piston into the upper part of the barrel.

The syringe is sterilised by boiling. The piston is withdrawn from the barrel, the needle detached and the parts, together with two pairs of dressing forceps and a spare needle, are placed in the steriliser, the bottom of which may be covered with a piece of plain lint. After removal from the steriliser, the parts are reassembled and the wire stylet is removed from the needle, which is then fixed on the syringe. The forceps are used in fitting the various parts together, in order to avoid contamination by contact with the fingers. The reassembled syringe with the needle attached is placed in a small sterilised bowl and the point of the needle may be covered with a swab soaked in spirit. Needles may be blunted by prolonged boiling and to avoid this the needle should be left in the steriliser for only a minute and then removed and immersed in spirit until the parts are reassembled.

*Method of giving a Hypodermic Injection.*—When an injection is to be given, all the necessary articles should be collected together on a tray. These include the sterilised syringe and needle in the separate sterilised bowl, a few small swabs, iodine solution, ether or alcohol, a sterilised minim measure, warm sterile water and the drug to be injected. The nurse should wash and disinfect her hands. If the syringe has not previously been tested, this should be done by drawing in and ejecting some sterile water as described above. If the drug is in the form of tablets, the piston is first removed from the syringe and the tablet is then dropped into the barrel or picked up and put there by sterilised forceps; the piston is replaced and from 5 to 10 minims of warm sterile water are drawn into the syringe, which is shaken until the tablet has dissolved.

Another method is first to dissolve the tablet in about 10 minims of warm sterile water in a sterilised minim measure and then draw the solution into the syringe.

The patient's skin at the site selected for the injection, usually the back of the arm or forearm, is cleaned with alcohol or ether and painted with iodine solution. Any air present in the barrel of the syringe and in the needle must be expelled before the injection is given. This is done by holding the syringe with the point directed upwards, gently tapping the barrel with the finger to detach any air bubbles which may adhere to the sides, and pressing the piston until the air has been ejected and a drop of the liquid escapes. A piece of the prepared skin free from veins is pinched up and drawn away from the underlying muscle tissue by the thumb and forefinger of the left hand. The syringe is held in the right hand and the needle, with the bevel facing upwards, is inserted in a slanting direction for about half an inch through the lower part of the fold of skin. The fold of skin is released and the contents of the barrel are slowly injected into the space under the skin by steady pressure on the piston. When all the solution has been injected, a finger is placed over the puncture and the needle is withdrawn. The surrounding skin may then be gently rubbed in an upward direction to spread the injection.

If the injection is supplied in the form of an ampoule the contents are sucked into the syringe from the ampoule after breaking off its neck.

If a standard solution is used, the neck of the bottle should be washed with alcohol and a small quantity of the solution poured into a sterile measure glass. A sufficient amount is then drawn up into the syringe and any excess afterwards ejected. The syringe containing the measured injection, and the bottle of the solution, must be checked by a sister or staff nurse before the drug is administered, in order that the accuracy of the dose may be verified.

After use, the syringe must be washed in warm water and sterilised. Absolute alcohol should be drawn through the needle and into the barrel and the wire stylet should be replaced in the needle. The syringe may be dried and put away in its case or, if in frequent use, may be kept in alcohol in a glass



jar until again required. If this is done, the nurse should be careful to remove all traces of alcohol from the syringe by rinsing it out with sterile water before using it again.

Vaccines and antitoxic sera are also administered hypodermically. Considerable quantities of antitoxic sera are often given, and a serum syringe, which is larger than the ordinary hypodermic one, is used for the injection. This is usually made deeply into the loose subcutaneous tissues of the buttocks or flank of the abdomen.

**Subcutaneous Saline Infusion.**—Normal saline solution, i.e., a solution of one drachm of salt (sodium chloride) in one pint of sterilised water, is sometimes introduced subcutaneously for the treatment of severe haemorrhage and shock and in cases of peritonitis. It is injected or infused into the loose subcutaneous tissues of the thigh, flank or axilla by means of a special apparatus. This consists of a special form of thermos flask which is suspended from a stand. The outlet from the vessel is fitted with a stopcock and is connected with a length of rubber tubing. The other end of the tubing is connected with a Y-shaped glass tube. Pieces of rubber tubing to which the infusion needles are attached lead from each limb of the glass tube. The skin of the part selected for the injection is disinfected and the apparatus and the solution are sterilised. The solution should be at a temperature of about 120°F. when introduced into the flask as it loses heat while passing through the tubing. Before the needles are inserted the stopcock should be opened and a quantity of the solution run through the tubing to expel the air. A fold of skin is pinched up with the finger and the needles plunged into the subcutaneous tissues. The flow of the solution is regulated so that it passes slowly into the tissues and, after the prescribed quantity, usually one to three pints, has been injected, the needles are withdrawn and the punctures sealed with gauze and collodion.

**Intramuscular Injection.**—This method is used for the injection of heavy liquids and substances which might damage the skin if injected subcutaneously, such as bismuth, mercury, quinine and some organic preparations of arsenic. The site selected for the injection is one where the muscular tissue is



thick, such as the buttocks or back of the thigh. A larger syringe and a longer needle than those used for hypodermic injection are usually needed. The skin is cleaned and painted with iodine and the needle is plunged deeply and vertically into the muscle.

(5) **Directly into the Blood by Intravenous Injection.**

In conditions where a rapid and powerful effect is required, certain drugs may be injected directly into a vein. This method is also used for the administration of some of the organic arsenical preparations which are used in the treatment of syphilis. The vein selected for the injection is usually one at the bend of the elbow and the operation is performed by the doctor. As a rule a syringe of 5 to 10 c.c. capacity is required.

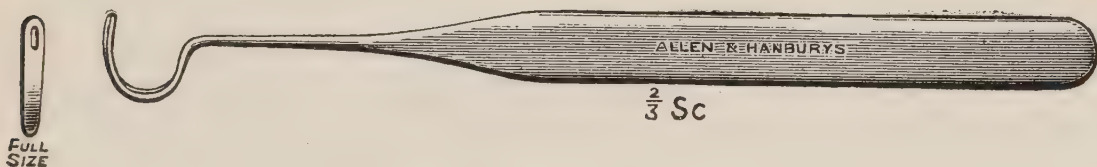


FIG. 24.—ANEURISM NEEDLE.

**Intravenous Saline Infusion.**—In cases of shock and collapse and after severe haemorrhage, normal saline solution may be introduced directly into a vein in amounts from one to four pints. A special transfusion apparatus is required for giving an intravenous infusion, and the following instruments and materials will be required by the doctor for the operation of exposing the vein and giving the infusion: scalpel, dissecting forceps, artery forceps, scissors, aneurism needle, needles and sutures, silk ligatures, dressings, bandages, iodine and antiseptic lotions.

**Blood Transfusion.**—Blood obtained from another person is sometimes used to replace blood lost from profuse haemorrhage and also in the treatment of severe shock. The blood is withdrawn from the donor and is collected in a sterile graduated vessel. It is mixed with sodium citrate solution to prevent clotting and, after having been filtered, is injected into the patient's vein by means of a transfusion apparatus.

(6) **By the Rectum.**

Medicines may be given by the rectum through the medium of enemata or suppositories. The various forms of medicinal enemata and suppositories and the methods employed in their administration are described in Chapter XII.

(7) **Into the Cerebro-spinal Fluid.**

Antitoxic sera and certain drugs are occasionally given by injecting them into the spinal canal in the lumbar region. The operation of lumbar puncture is described in Chapter VIII.

## CHAPTER XII.

### ENEMATA AND SUPPOSITORIES—CATHETERS—DOUCHES.

#### Enemata.

An enema is a liquid preparation which is injected into the bowel. Enemata may be classified according to their composition and the purpose for which they are given as purgative, medicinal and nutrient enemata. Medicinal and nutrient enemata, which are intended to be retained in the bowel, are usually small in quantity in comparison with purgative enemata, which are meant to be returned.

#### Purgative Enemata.

These are used to empty the lower bowel and are given in the treatment of constipation, before surgical operations and to empty the rectum before the administration of nutrient and medicinal enemata.

**Simple or Soap Enema (enema saponis).**—This is the most commonly used form of purgative enema. It is prepared by dissolving about one ounce of soft soap or shredded yellow soap in one pint of boiling water. The mixture is stirred into a lather and the froth removed. It is then diluted by the addition of one or two pints of water and cooled to a temperature of about 100°F.

*Method of Administration.*—The enema is usually injected by means of a Higginson's syringe to the nozzle of which a rectal tube or catheter may be attached. It may also be administered through a douche-can or a funnel and a rectal tube.

The patient should be placed on his left side near the edge of the bed with his thighs drawn up and knees flexed. The bedclothing is moved aside with the exception of the sheet which is left loosely in position over the buttocks to prevent unnecessary exposure of the patient during the administration



of the injection. The buttocks may be raised by placing a pillow under them, and the bedclothing should be protected by a waterproof sheet under the thighs. The basin containing the soap solution is placed on a small low table or stool near the side of the bed. The weighted valve end of the syringe is immersed in the solution and the bulb is compressed and relaxed in order to drive the air out of the syringe and tube and fill them with the solution. This action is continued until the fluid ejected is free from bubbles. The rectal tube and the nurse's forefinger are lubricated with vaseline and the tube is inserted into the rectum guided by the finger which is used to dilate the anal orifice and to act as a guide for the introduction of the tube which is slowly passed about six to eight inches into the rectum. No force should be needed in passing

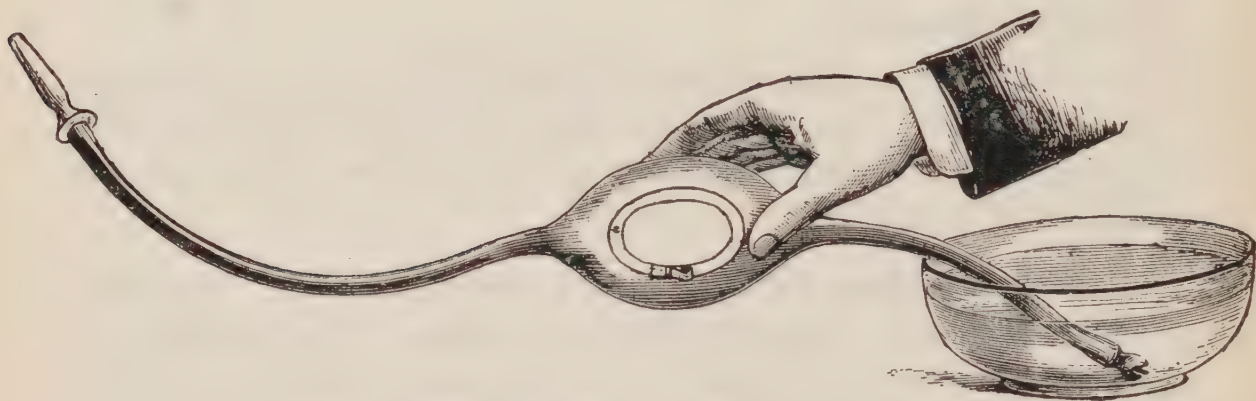


FIG. 25.—ENEMA SYRINGE.

the tube, and it should be remembered that the direction of the bowel is not straight upwards but slightly backwards and to the left side. The liquid is injected by compressing the bulb of the syringe slowly and regularly until the required quantity, usually one to two pints in the case of adults, has been introduced into the bowel. The valve must be kept constantly immersed in the solution to prevent the entry of air. If the patient complains of distension and griping pains during the operation, it should be discontinued for a few moments until the pain has passed off. The injection should be given slowly and from three to five minutes should be occupied in introducing one pint of the solution. After the injection has been completed, the tube is gently withdrawn, detached from the

syringe and put aside to be washed and sterilised. A warm towel may be pressed against the perineum for a few minutes after withdrawal of the tube. A bed pan should be placed in readiness, but the patient should retain the injection for about ten minutes if possible before allowing the bowels to act. If a rectal tube is not attached to the syringe, the bone nozzle must be lubricated and carefully inserted into the rectum as far as the shield at its base permits.

A simple enema may also be administered by means of a douche-can or funnel and a rectal tube. The rectal tube may be attached directly to the funnel or it may be connected with a short glass tube, the other end of which is attached to the funnel by a piece of rubber tubing. The tube should be fitted with a clip or stopcock to control the flow of liquid. When an injection is given by this method, some of the soap solution is poured into the funnel to expel the air from the tubing and the rectal tube is then inserted into the rectum in the manner described above. The solution is poured into the funnel, which is raised about one foot or more above the level of the patient, and allowed to pass into the rectum by gravitation, the force and rate of the flow depending on the height of the funnel. By means of the glass tube which is sometimes interposed between the funnel and rectal tube, it can be seen if the liquid is flowing freely through the apparatus. In order to avoid the entry of air into the rectum, the funnel must not be allowed to become empty during the administration.

A transient erythematous rash occasionally follows the administration of a soap enema.

The term "simple enema" is also applied to an injection consisting only of water at a temperature of 95° to 100°F. This is used for washing out the bowel daily when a patient is being fed by nutrient enemata.

**Olive Oil Enema.**—This is given to soften the faeces in cases of severe constipation and to prevent pain in the passing of a motion in cases of disease of the lower bowel and after operation on the rectum. From six to twenty ounces of the oil may be injected at a temperature of 100°F. by means of



a rectal tube and funnel raised about one foot above the level of the patient. When given to soften hard faeces, the injection should be followed about six hours later by a soap and water enema.

**Castor Oil Enema.**—This consists of one to two ounces of castor oil mixed with olive oil, soap and water, or starch mucilage.

Epsom salts or aloes, mixed with warm water, may also be given as an enema.

**Glycerine Enema.**—This is given by means of a special syringe with a bent vulcanite nozzle. The quantity injected is from one to four drachms for an adult. The glycerine causes an exudation of liquid from the mucous membrane; this softens and lubricates the faeces and usually produces an evacuation of the bowels soon after its administration.



FIG. 26.—GLYCERINE SYRINGE.

### Medicinal Enemata.

Drugs may be given through the medium of enemata for the purpose of producing a local action on the bowel or for their general effect on the body after absorption by the blood.

Those having a **local action** may be classified as follows :—

(a) **Sedative Enemata.**—These are given for the treatment of diarrhoea and the relief of pain. An enema consisting of twenty to thirty minims of tincture of opium mixed with two to four ounces of thin starch is given for this purpose.

(b) **Anthelmintic Enemata.**—These are injected to kill intestinal parasites such as thread worms. They may consist of a solution of common salt, about two drachms to the pint



of water, or of about six ounces of infusion of quassia in half a pint of water. The lower bowel must be cleared of faeces by a simple enema before the anthelmintic enema is injected.

(c) **Astringent Enemata.**—These are used to constrict the blood vessels and mucous membrane of the lower bowel in cases of ulceration and dysentery. They may consist of various drugs such as quinine, tannic acid or silver nitrate, dissolved in a pint of water.

(d) **Antispasmodic or Carminative Enemata.**—These are given to relieve flatulence and abdominal distension. An enema composed of half to one ounce of turpentine well mixed with about eight ounces of starch mucilage or with one to two pints of water may be used for this purpose.

The enemata which are given for their **general effect** may be described as :—

(a) **Stimulating Enemata.**—These are given in cases of shock and collapse and after severe haemorrhage. A pint of normal saline solution at a temperature of 100° to 105°F., to which an ounce of brandy may be added, is slowly run into the rectum from a douche-can through a rubber tube or catheter. In opium poisoning, a stimulating enema of six to eight ounces of strong black coffee and an ounce of brandy may be injected into the rectum.

A **rectal infusion, or rectal saline injection**, consisting of three to five pints of normal saline solution, is also used in cases of shock and haemorrhage. The apparatus required for giving a rectal saline infusion consists of a douche-can or a funnel to which about six to eight feet of rubber tubing is attached. The tubing is connected with a rectal tube or a No. 12 rubber catheter by means of a glass tube. A pair of Spencer Wells forceps or a clip may be used to regulate the flow of the solution through the tubing, and the bedding should be protected by a draw-sheet and a waterproof sheet. When the condition of the patient is not urgent, the bowels should be evacuated by means of a simple enema before the infusion is

given. The solution should be at a temperature of  $105^{\circ}$  F. and, before it is injected, a quantity should be run through the apparatus to expel the air. The rectal tube is lubricated with olive oil or vaseline and gently inserted about six to nine inches into the rectum. The saline solution is allowed to trickle into the rectum at a rate of about one pint every half hour, the flow being regulated by the clip or by the height of the can above the patient. The contents of the douche-can must be kept at the required temperature by adding quantities of hot solution from time to time.

(b) **Sedative Enemata.**—An enema consisting of one to two ounces of a solution of chloral hydrate and potassium bromide is sometimes given in cases of epilepsy when a succession of fits occurs (*status epilepticus*), after the bowel has been emptied by a purgative enema.

Hypnotic drugs and anaesthetics are sometimes administered by means of enemata, e.g., paraldehyde may be given by the rectum in olive oil or dissolved in saline solution.

### **Nutrient Enemata.**

In cases where food cannot be given by the mouth, a patient may be fed by nutrient enemata.

A nutrient enema is an enema which contains nourishment and may consist of various foodstuffs. It is usually made up of one and a half ounces of peptonised milk, one egg which should be well beaten up before being added to the milk, with beef tea or one or two tablespoonfuls of brandy. The total amount injected at one time should not exceed four ounces, as larger quantities would not be retained in the bowel. The mucous membrane of the bowel is capable of slowly absorbing nourishment, but it has no digestive powers and it is, therefore, necessary to peptonise the food before injecting it (see page 77).

Another form of nutrient enema consists of ten ounces of normal saline solution with the white of one egg and a drachm of glucose.

A soap and water enema must be given about half an hour before the rectal feed is injected, and, if rectal feeding is to be continued, this should be repeated every day. Nutrient enemata are given at intervals of six hours, and the bowel may be washed out with warm water between the feeds.

*Method of Administration.*—The bladder should be emptied before the enema is given. The patient should be placed on the left side with the hips raised. The apparatus required consists of a rubber catheter connected with a short glass tube to which is attached a piece of rubber tubing fitted with a funnel, or the barrel of a two-ounce glass syringe. The temperature of the feed should be about 105° F. The end of the catheter is lubricated with vaseline, and the tube is freed of air by pouring a little of the feed into the funnel and pinching the catheter when the air has been driven out. The catheter is then inserted into the bowel for a distance of about twelve inches and the feed is poured into the funnel; it can be seen through the glass connection if the fluid is flowing freely into the catheter. The injection is given slowly and at a low pressure, the funnel being held about eight inches above the bed. Just before the funnel is empty, the tubing is pinched and the catheter slowly withdrawn. The patient should lie quietly for half an hour afterwards. After use, the apparatus should be well washed and sterilised.

### **Suppositories.**

A rectal suppository is a solid preparation for insertion into the rectum. It is conical in shape, from three-quarters of an inch to one inch long and contains a drug, usually incorporated with cacao butter, a substance which melts at the temperature of the body. Another form of suppository, a vaginal suppository, which is inserted into the vagina, is larger but of similar composition.

*Method of Administration.*—Before a suppository is inserted, the patient is placed on his left side, the folds of the buttocks are separated and the pointed end of the suppository, after its tinfoil wrapping has been removed, is smeared with



vaseline or oil. It is then pushed through the anus for an inch or two until it is beyond the internal sphincter muscle, in order to ensure its being retained in the rectum. If the rectum is inflamed and irritable, as in cases of dysentery, the suppository may be expelled before it has melted; a warm towel, pressed over the anus and perineum for a few minutes after the suppository has been introduced, may prevent its expulsion. The lower bowel should usually be emptied by an enema before a suppository is inserted.

Rectal suppositories are classified as purgative, medicinal and nutrient.

**Purgative Suppositories.**—These are composed usually of glycerine and gelatine. The glycerine causes an exudation of liquid from the mucous membrane of the bowel and this produces an evacuation.

**Medicinal Suppositories.**—This variety is made of cacao butter with which a drug is incorporated. When the suppository melts, the drug is set free and absorbed. Medicinal suppositories are usually given for their local effect on the rectum, but some may be administered for their general action.

Morphia, belladonna, adrenalin, tannic acid and quassia are some of the drugs which are given in the form of suppositories for their sedative and astringent action on the mucous membrane of the bowel.

**Nutrient Suppositories.**—These contain predigested milk or meat extract, and they are sometimes used to supply nourishment in cases where food cannot be given by the mouth.

### Catheters.

Catheters are tubes which are used for passing through the urethra into the bladder to withdraw urine, or to wash out the cavity of the organ.

The outer end of a catheter is open, but the point, or end which is inserted into the bladder, is closed and has an oval opening on its side called the eye.

Catheters are made of silver, glass, or of flexible materials such as soft india rubber or gum-elastic, a fabric material coated with varnish. They are graduated according to their diameters in sizes from one to twelve on the English Scale. The rigid variety of catheter is usually curved towards its point; the length of the male catheter is about fourteen inches, the female one being usually shorter and less curved.

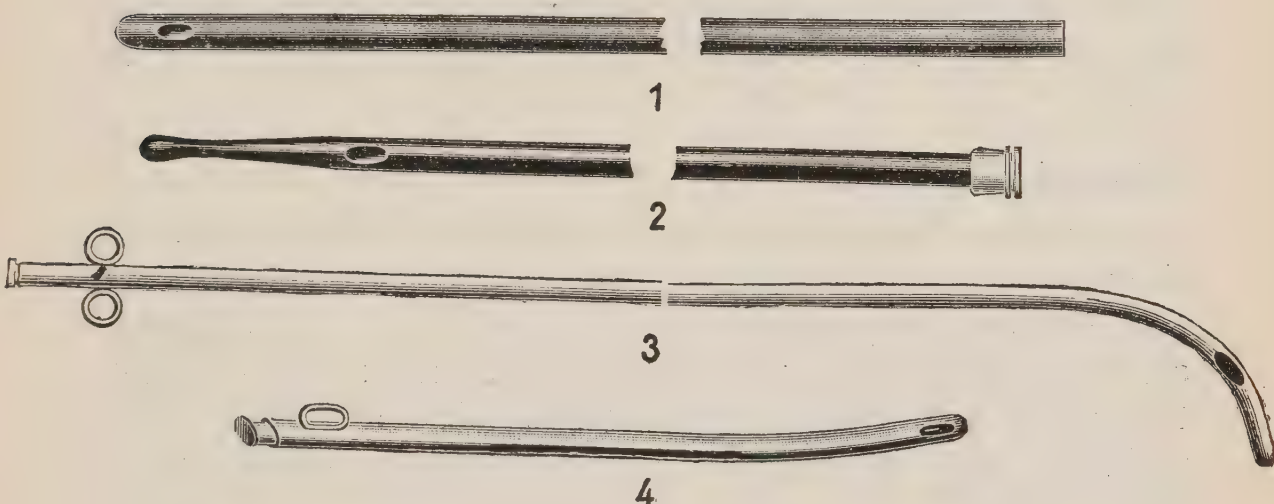


FIG. 27.—CATHETERS.

1, Rubber; 2, Gum-elastic; 3, Silver (male); 4, Silver (female).

A **Eustachian catheter** is a different instrument which is passed along the floor of the nose into the Eustachian tube in the examination or treatment of ear conditions.

**Bougies** are solid rods which are inserted into the urethra or other passages of the body in the treatment of cases of stricture in order to dilate the passage or to apply drugs to the mucous membrane.

Catheters are usually passed to relieve distension of the bladder in cases of retention of urine. They are also used in order to obtain a specimen of urine free from contamination for testing, to empty the bladder before an operation, or to wash out the bladder in cases of inflammation of the organ.

It is important that strict antiseptic precautions should be observed in catheterisation, as the bladder is very susceptible to infection and inflammation (cystitis) may follow

the introduction of micro-organisms. Rubber, metal and glass catheters are sterilised by boiling. The gum-elastic variety, however, is damaged by exposure to hot water for longer than about a minute and it is cleaned by immersion in a 1 in 1,000 solution of perchloride of mercury, or in some other suitable disinfectant, and afterwards rinsed with sterile water, or it may be sterilised by exposure to formalin vapour in a special apparatus. Flexible catheters may be stored in a special container in a solution of formalin or of glycerine and boracic acid; they should be laid straight and should not be bent.

### **Catheterisation.**

*Female.*—In the case of mental patients a rubber catheter, size 7 or 8, is usually passed. A glass one is liable to be broken, particularly if the patient is restless or resistive. The catheters are sterilised by boiling for about five minutes; it is advisable to prepare two as one may become soiled and have to be replaced; they are removed from the steriliser with sterilised forceps and placed in a dish containing sterile water or boracic lotion. The following articles, etc., should also be prepared and placed on a tray covered with a clean towel: A basin or a bedpan to receive the urine, a basin containing swabs in antiseptic lotion and another basin to receive the soiled swabs and used catheter, sterilised olive oil or other lubricant, dry wool swabs. A portable lamp may also be needed.

The patient should lie on her back with the knees raised and thighs separated, her clothing should be folded out of the way, and the bedclothing turned down as far as the knees, the patient being covered with the sheet or with a small blanket reaching from the chest to the hips. A waterproof and a draw-sheet may be placed under the patient. A bedpan may be used or a basin placed between the thighs to receive the urine.

The nurse should wash and disinfect her hands, move the bedclothing out of the way with her elbow and, with her right hand, wipe the vulva with swabs soaked in antiseptic lotion, the fingers of the left hand being used to separate the labia.



The wiping should be done from above downwards. A small swab may be placed in the vaginal orifice as a guide for the insertion of the catheter and to prevent infection of the urethra. It is advisable that the nurse should again disinfect her hands at this stage. The catheter is then removed from the dish, lubricated and the point gently inserted into the star shaped opening of the urethra. After it has passed about two or three inches it will have penetrated the bladder and the urine will begin to flow. When the flow diminishes the nurse may press her hand over the pubes to expel any remaining urine, and the catheter may be withdrawn a little until the flow has ceased. The catheter is removed, a finger being placed over its open end to prevent drops of urine being spilled on the bed, and the parts are again swabbed and dried with sterile wool.

The lubricant should be wiped off the catheter which should then be washed, first in cold water by letting the stream from a tap run through in both directions, and afterwards with warm water and soap. It is then sterilised, dried and put away.

*Male.*—The catheter and the articles mentioned above are prepared and placed in readiness and the nurse disinfects his hands. The opening of the urethra should be wiped with swabs soaked in antiseptic lotion, the penis being held in the left hand; the point of the lubricated catheter is then inserted into the orifice and the instrument gently passed along the urethra until it enters the bladder and urine begins to flow.

A catheter is usually passed on a male patient by the doctor, but the nurse may be required to perform the operation in certain circumstances. Rigid catheters should not as a rule be passed by a nurse as serious damage to the lining of the urethra may be caused by unskilful manipulation.

A patient on whom a catheter has been passed must be closely watched for some time and, if he shows signs of shock or suffers from a rigor or a rise of temperature, the doctor must be immediately informed.

**Washing out the Bladder.**

This operation may be necessary in cases of cystitis or other diseases of the bladder. In addition to a catheter and the other articles needed for passing it, a glass funnel, about four feet of narrow tubing, and a glass connection will be required. The tubing is connected at one end to the funnel and at the other to the glass connection. Every part of the apparatus must be sterilised. The liquid used to wash out the bladder may consist of sterile water, normal saline solution, boracic or some other lotion. Two or three pints should be prepared at a temperature of 100° to 105° F.

A sterilised rubber catheter, number 9 or 10, is passed into the bladder and the urine drawn off. The tubing is freed from air by running some of the lotion through it from the funnel, and the glass connection is attached to the end of the catheter which has been left in position. A measured quantity of the lotion, usually about five ounces, is run into the bladder and allowed to remain for a few minutes. The funnel is then lowered and the liquid allowed to discharge into a basin. The procedure is repeated until the returned lotion is clear. The nurse should be careful not to overdistend the bladder by filling it with too large a quantity of lotion at one time.

**Douches.**

A douche is a stream or jet of liquid directed under pressure either externally on the surface of the body or internally into one of the cavities opening on the exterior of the body.

Internal douches are given to irrigate or wash out the various cavities, to treat inflammation of their lining mucous membrane, and to check haemorrhage. The cavities which are treated by douching are chiefly the vagina, uterus, rectum, large intestine, bladder, stomach and the ear and nose. Details of the methods of giving special douches are described in other chapters.

Douches are usually administered by an irrigator or douche-can which is connected with a catheter or a nozzle by a length of rubber tubing. They may also be given by a

syringe. The liquid injected is returned or allowed to flow out of the cavity again by the action of gravity or by means of siphonage.

### Rectal Douche.

This may be ordered to clean the rectum or to treat inflammation. Water, normal saline solution, or solutions containing antiseptic or other substances are used, and the injection may be cold or hot. A rectal catheter or tube is connected to the tubing by a short glass tube and one or two

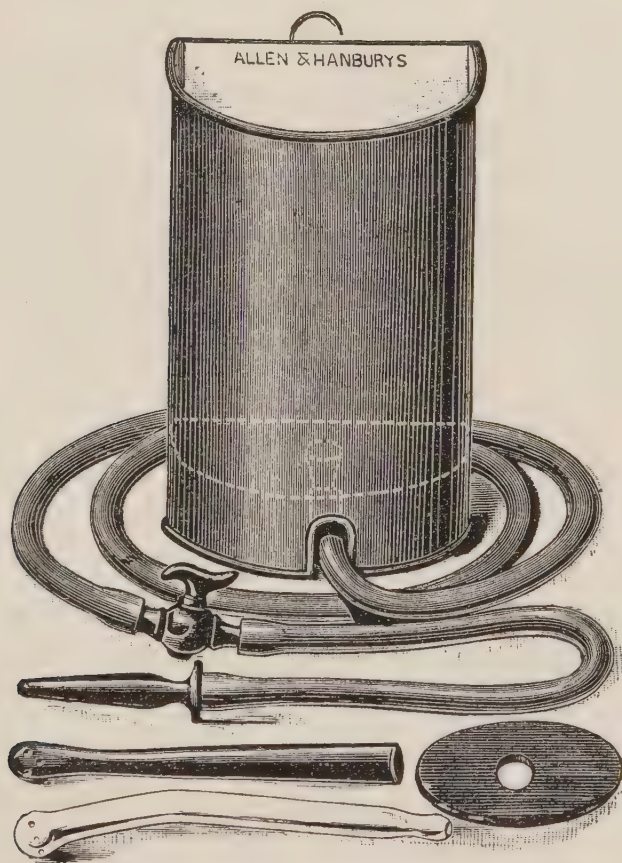


FIG. 28.—DOUCHE.

pints of the liquid from the douche can, placed at a higher level than the patient, is run into the rectum and allowed to flow out again. A continuous flow in and out can be maintained if a small catheter is also inserted at the side of the rectal tube.



Colitis and dysentery are sometimes treated by douching or lavage of the colon. The hips of the patient should be well raised with pillows and several pints of normal saline or some other solution are allowed to run slowly into the rectum and are retained for some time. This form of irrigation is called **Plombière's douche.**

## CHAPTER XIII.

### MICRO-ORGANISMS AND DISEASE.

#### ANTISEPSIS—ASEPSIS—STERILISATION.

Micro-organisms, also called germs or microbes, are minute living organisms and are the simplest and lowest forms of life. They consist of single cells composed of protoplasm surrounded by a membrane and are so small that they are visible only when magnified many hundreds of times by a microscope.

Micro-organisms are found almost everywhere—in the air, in water, in food, in the upper layers of the soil, on our skin and in our bodies. Some have a beneficial action and are of use in the destruction of dead matter and the purification of sewage, in the manufacture of alcohol, cheese, and other substances, and in the digestion of food and the nutrition of plants; others, called the **pathogenic** micro-organisms, are harmful and are the cause of various diseases and of inflammation of wounds.

**Putrefaction** is an example of a change in dead organic matter caused by germs, e.g., meat when exposed to the air under ordinary atmospheric conditions becomes bad or putrid and is gradually destroyed. **Fermentation**, such as occurs in the production of wine, is another process which is a result of the action of micro-organisms. The fact that the processes of fermentation and putrefaction were due to the action of micro-organisms was discovered about 1860 by a French chemist named Pasteur, and, in 1865, Lord Lister, as a result of the knowledge gained by Pasteur's work, employed antiseptics to prevent the infection of wounds. Pasteur continued his researches and, in 1877, proved that anthrax, a disease prevalent among cattle and sheep, was caused by a bacillus. In 1885 he reported that he had successfully treated patients suffering from hydrophobia or rabies by inoculating them with material containing organisms whose virulence had been attenuated or weakened by drying. About 1880 Dr. Koch, a

German physician, isolated and grew different microbes artificially and showed that certain diseases, such as tuberculosis, were due to infection by specific varieties of micro-organisms.

Micro-organisms may be either animal or vegetable and may be classified into four groups, viz., protozoa, fungi, bacteria and viruses.

(1) **Protozoa.**—These are the lowest forms of animal life, and consist of single-celled organisms. Certain organisms belonging to this group cause disease in man, e.g., syphilis, malaria and amoebic dysentery.

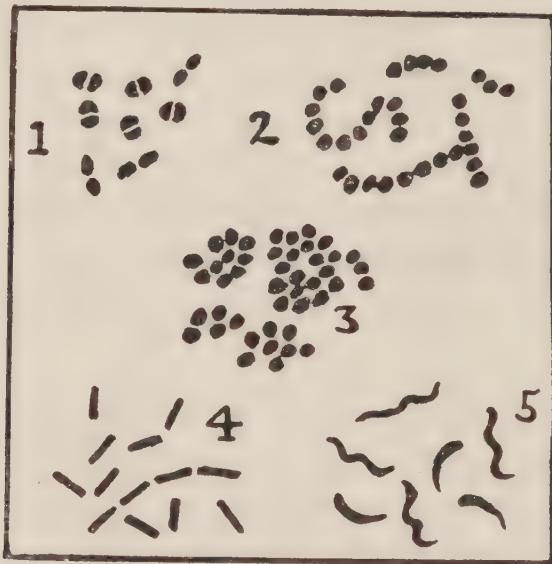


FIG. 29.—CLASSES OF BACTERIA.

- 1, Diplococci ; 2, Streptococci ; 3, Staphylococci ; 4, Bacilli ; 5, Spirilla.  
 Cocci cause suppuration, pneumonia and other diseases.  
 Bacilli cause tuberculosis, typhoid, diphtheria, etc.  
 Spirilla cause cholera, syphilis, etc.

(2) **Fungi.**—Moulds, which grow in damp material, such as bread or leather, produce the condition known as mildew. Certain fungi cause ringworm of the skin and thrush, a disease affecting the mucous membrane of the mouth in infants. A yeast is a type of fungus, which causes fermentation and produces alcohol ; yeasts are used in the manufacture of wine and beer.



(3) **Bacteria.**—These are low forms of vegetable life, and some of them cause various infectious and other diseases. They are classified according to their size and shape as follows :

- (a) Cocci : round or spherical,
- (b) Bacilli : straight rods,
- (c) Spirilla : curved, spiral or corkscrew-shaped rods.

The cocci may occur singly or they may be arranged in pairs (diplococci), in chains (streptococci) or in clusters like grapes (staphylococci).

(4) **Viruses.**—In addition to the above varieties of micro-organisms, investigations have revealed the existence of still smaller micro-organisms which are the cause of certain infectious diseases such as measles and smallpox. These micro-organisms are called viruses, and are so exceedingly minute that they are invisible under the microscope and can pass through a porcelain filter.

Bacteria flourish only under conditions favourable to them and they need suitable food, moisture and a certain temperature in order to grow and develop. Some require oxygen which they obtain from the air, and others flourish only in places where they are not exposed to the air, such as in deep wounds and the deeper layers of the soil. Cleanliness, fresh air and sunlight inhibit the growth of bacteria. They are killed if exposed to a sufficiently high degree of heat and by certain chemicals called disinfectants.

Bacteria can reproduce themselves and multiply with enormous rapidity by a process called fission, i.e., dividing into two halves. Thus one bacterium becomes two, the two four, the four eight and so on. Under favourable conditions one bacterium may produce many millions in a day or two.

Some varieties of bacteria possess the power of changing into seed-like bodies called **spores** when the conditions for their development are unsuitable. These spores are capable of retaining their vitality and surviving under adverse conditions for long periods and they begin to develop and multiply only when the conditions have again become favourable for their growth.

When pathogenic bacteria gain entrance to the body, they grow and multiply unless the protective substances in the blood and tissues are capable of destroying them. The symptoms of disease caused by bacteria are both local and general. The local symptoms, such as inflammation or suppuration, are caused by the action of the organisms at the site of infection ; the general symptoms, such as fever, are the result of the absorption and circulation in the blood stream of poisonous substances, called **toxins**, produced by the bacteria. In the condition termed septicaemia, the bacteria themselves circulate in the blood stream and, in another condition called pyaemia, they are deposited in different parts or organs of the body and produce abscesses.

An individual is more vulnerable to bacterial infection when his general health is poor and when the resistance of his tissues has been lowered by disease or injury. The leucocytes or white corpuscles of the blood and other cells of the tissues defend the individual against infection by attacking and destroying the invading micro-organisms. They also manufacture protective substances called **antitoxins** which help to destroy the bacteria and neutralise the poison produced by them. If these defensive measures are successful in resisting the infection, the protective substances remain in the blood and tissues and the individual may remain immune to infection by the particular organism for a long period afterwards.

Under the term **antisepsis** are included all measures which may be taken to destroy bacteria or prevent their growth. An **antiseptic** is a chemical which prevents the growth of micro-organisms without necessarily destroying them ; an agent which is able to destroy germs when brought into contact with them is called a **disinfectant** or **germicide**. A substance may be an antiseptic without having disinfectant properties, but all disinfectants are antiseptics. A list of disinfectants and antiseptics is given in the Preliminary Handbook for Nurses.

**Asepsis** is the term used to denote a condition in which no micro-organisms are present. The process of making anything sterile or aseptic is called **sterilisation**.



Aseptic surgery aims at preventing anything which is not sterile coming in contact with the operation wound.

Heat is the most effective means of sterilisation. It may be applied in a dry or moist form, but the latter is generally used, as moist heat has better powers of penetration than dry heat and is effective at a lower temperature. Metal surgical instruments, rubber articles, basins, ligatures, etc., can be sterilised by boiling them in water for twenty minutes. The addition of bicarbonate of soda in the proportion of one drachm to a pint of the water prevents the rusting which might result from boiling. If glass articles are to be sterilised, they should be placed in the water before it has boiled, in

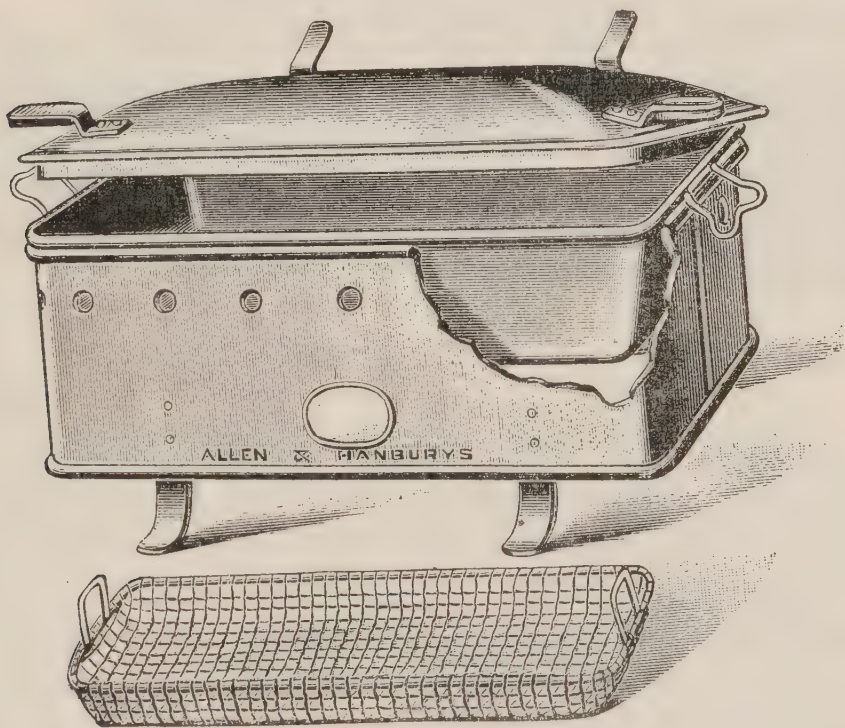


FIG. 30.—INSTRUMENT STERILISER.

order to avoid sudden heating which might cause them to crack. Knives and needles should be wrapped in lint and boiled for only a few minutes, as prolonged boiling blunts them. They are then placed in pure lysol and afterwards in spirit.

Articles, such as dressings, towels, etc., which are used in a dry state, are sterilised by steam. Superheated steam, or steam under pressure, is used for this purpose, and its temperature varies according to the pressure to which the water



is subjected in boiling it. A special sterilising apparatus is used. This consists of an inner chamber surrounded by an outer jacket which is filled with steam under pressure. The dressings or other articles to be sterilised are contained in metal drums the walls of which have perforations which can be opened by a sliding shutter to admit the steam. When the required temperature or pressure is registered on the thermometer or gauge connected with the steriliser, the steam is admitted into the inner chamber, enters the drums through the perforations and penetrates the articles contained in them. The steam is allowed to remain in contact with the contents of the inner chamber for about twenty minutes. The drums are then removed from the steriliser and the perforations in their walls are shut by closing the sliding shutter.

Instruments may also be sterilised by thoroughly cleaning them in a strong antiseptic liquid, such as 1 in 20 carbolic or a 2 per cent. lysol solution, for half an hour. Towels may be sterilised by boiling or by soaking in 1 in 20 carbolic lotion for an hour or two.

## CHAPTER XIV.

### **SURGICAL NURSING.**

#### PREPARATIONS FOR AN OPERATION—POST-OPERATIVE NURSING.

In the nursing of surgical cases the exact and careful carrying out of the measures prescribed to avoid the infection of wounds by micro-organisms is of the utmost importance, and the rules and procedure designed to prevent such contamination must be scrupulously observed.

#### **Preparations for an Operation.**

When a patient has to undergo a surgical operation certain preparations have to be made. The room in which the operation is to be performed is cleaned and disinfected, the patient must be properly prepared, the necessary instruments, dressings and other articles sterilised and placed in readiness for the surgeon, and the nurse must prepare herself to assist at the operation.

#### **The Room.**

In some institutions a room, called an operating theatre, specially designed and equipped for the performance of surgical operations is available and is reserved for this purpose. An operating theatre is planned to provide good lighting and ventilation and to prevent the accumulation of dust and dirt. Its walls are composed of material having a smooth surface which can be easily cleaned, corners are rounded, and there should be no ledges or crevices to harbour dust. Specially designed artificial lighting and a hot and cold water supply are installed. The taps and waste of the washing basins and sinks are controlled by levers operated by the foot or arm in order to obviate the necessity for touching them with the hands. The theatre is equipped with an operating table, and tables for the instruments, the dressings and the anaesthetic apparatus. Tables, stools, and other articles of furniture are usually made of metal and glass so that they can be easily cleaned and disinfected.

When a special theatre is not available it is necessary to use a room in a ward for the performance of an operation. The room selected should be one which has a good light. Carpets, curtains and all unnecessary articles of furniture are removed, and the room should be thoroughly washed one or two days before the operation. The floor is scrubbed with soap and water, special attention being given to the corners and crevices, and is afterwards washed with some disinfectant; the walls and everything in the room are wiped with a cloth wrung out in a disinfectant liquid, such as 1 in 40 carbolic lotion.

If the operation is an emergency one and there is no time properly to prepare a room for it, furniture should not be moved unnecessarily, as this would disturb the dust and disperse it all over the room. The walls and furniture should be wiped with a cloth wrung out in disinfectant lotion, and a sheet or sheets soaked in disinfectant may be laid on the floor under the operating table.

The temperature of the room at the time of the operation should be about 75° F. and, if it is necessary to open the windows for ventilation, the opening should be covered with a piece of gauze to prevent the entry of flies.

The following articles of furniture and equipment should be placed in the room :—

Operating table.

Three small tables.

Washstand or table with two wash basins.

Stool or chair for the anaesthetist.

Two enamel baths or pails.

Lotion bowls.

Sterilised water.

Disinfectant lotions.

Sterilised towels.

Sterilised and antiseptic dressings.



An ordinary table, about 6 by  $2\frac{1}{2}$  feet, may be used as an operating table. It should be washed and afterwards wiped with disinfectant lotion and placed in a well-lighted position in the room. A folded blanket is placed on the table and this is covered with a clean sheet, or a waterproof sheet may be placed on the blanket and covered with another blanket and the sheet. A small pillow and a blanket with which to cover the patient will also be needed.

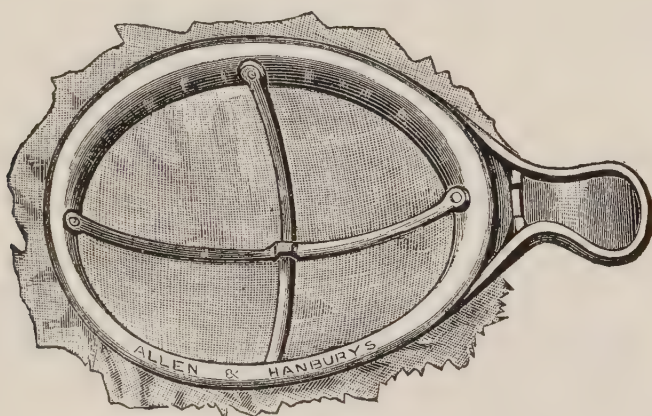


FIG. 31.—CHLOROFORM INHALER.



FIG. 32.—TONGUE FORCEPS.

One table is required for the instruments and another for the lotion bowls and swabs: these should both be placed at the side of the operating table. A third table placed at the head of the operating table carries the chloroform or other anaesthetic, the mask, drop bottle, gag and tongue forceps. A measure glass, a kidney shaped basin, a towel, and a hypodermic syringe containing strychnine solution or other stimulant should also be placed on the anaesthetist's table.

All the tables should be covered with clean sterilised towels.

Two basins, two sterilised nail brushes in a bowl of lysol lotion and two pieces of soap should be provided on a table or washstand placed at the side of the room. These articles are needed by the doctor and his assistants for washing and disinfecting their hands. Sterilised overalls, caps and masks may also be needed for the surgeon and his assistants.

The stool or chair for the anaesthetist should be placed at the head of the operating table, and it may be necessary to raise the level of the seat by cushions or other means to enable the doctor to administer the anaesthetic with ease.

Two enamel baths or pails are required for the disposal of soiled dressings, towels, etc.

Three or four sterilised trays should be provided for the instruments, ligatures and sutures ; about six basins or bowls will also be needed for lotions and swabs, and for soiled articles and discharges.



FIG. 33.—DRESSING TRAY (KIDNEY-SHAPED).

A plentiful supply of hot and of cold sterilised water should be available. This is kept in ewers or jugs previously cleaned and sterilised ; the tops of these vessels are covered with sterilised towels or gauze. Boiling water may also be needed during the operation.

An adequate number of small sterilised towels should be available. Antiseptic lotions should be prepared and normal saline solution may be needed.

### **The Patient.**

In cases where the operation is not one of urgency, the patient should be kept in bed in the infirmary ward for a day or two previously.

During this time he is given a diet of easily digestible food, the bowels are regulated, the urine tested and a temperature chart and other records are kept. If the patient is in an exhausted or debilitated condition and there is reason to fear that he may suffer from post-operative shock, sugar or glucose solution is sometimes ordered.

A dose of castor oil or some other aperient is usually given two days previous to the operation, and a simple enema may be administered a few hours before it takes place.

On the evening before the operation, the patient is given a warm bath and thoroughly washed with soap. The hair is washed if necessary and the nails are trimmed. If he is too ill to go to the bathroom he must be given a blanket bath in bed. After this bath, the skin over the region of the operation must be thoroughly and carefully prepared, the usual precautions as regards surgical cleanliness being observed. If there is any growth of hair, this is first shaved; the part is then washed with warm water and antiseptic soap, dried with a piece of sterilised lint or gauze, and finally rubbed with ether in order to dry the skin and to remove fat so that the antiseptic to be applied can penetrate the skin. A 2 per cent. solution of iodine in rectified spirit or a solution of picric acid is painted or swabbed over the part, which is afterwards covered with a dressing of sterile gauze or lint and securely bandaged. Unless the skin is perfectly dry, iodine does not penetrate it. It is, therefore, more effective to apply a sterilised dressing after the part has been washed and to wait for three or four hours before rubbing the skin with ether and applying the iodine solution. The part is then again covered with a fresh sterilised dressing.

Immediately before the operation, after the patient has been placed on the table, the part is exposed by removing the dressing and is again swabbed with iodine or picric acid solution.



The patient may be given a cup of beef tea and a slice of toast four to six hours before the operation, but no more food should be given until after the operation has been completed.

Before the patient is taken to the operating room, the teeth should be cleaned, artificial teeth removed, and the mouth washed out with lotion. The patient is asked to empty his bladder, and a catheter must be passed if necessary. In vaginal and uterine operations a douche is usually administered.

The patient should wear a pair of long woollen stockings for the operation, and the nightgown or other garment should be one which can be easily removed or folded so as to expose the region of the operation. If the patient is a woman, any hairpins should be removed and long hair arranged in two plaits. For operations in the region of the face and neck, the hair should be covered with a sterilised towel.

A hypodermic injection of morphia or atropine, or both, is sometimes ordered by the doctor to be given about half an hour before the operation.

In cases where the operation is an emergency one and there is no time to carry out the above procedure, the preparation of the patient has to be left until he is on the operating table. In such cases the skin is prepared by painting it with iodine or picric acid solution.

### **The Instruments.**

Metal surgical instruments are sterilised by boiling in water to which a small quantity of bicarbonate of soda may be added to prevent corrosion. All the instruments, except those with sharp points or cutting edges, such as scalpels, scissors and needles, are boiled for about twenty minutes in a steriliser. They are then removed separately by means of sterilised forceps and placed in an instrument tray containing sterile water or 1 in 40 carbolic lotion. The scalpels, scissors and needles are wrapped in pieces of lint before being placed

in the steriliser, and should be immersed in the boiling water for only a minute or two as prolonged boiling blunts the cutting edges; they are then removed from the steriliser, placed in a tray containing pure lysol for about half an hour, and are afterwards immersed in hot sterile water or spirit lotion to remove the lysol adhering to them.

Rubber articles, such as catheters, drainage tubes and gloves, are also sterilised by boiling.

**Ligatures** are cords or threads which are used to tie the blood vessels and to prevent bleeding when the vessels are cut. They may consist of materials which can be gradually absorbed by the tissues, such as catgut, or of unabsorbable materials, such as silk and horsehair. **Sutures** are also threads composed of catgut, horsehair or other material, and are used to bring the edges of a wound together and keep them in position until healing has taken place.

Ligatures and sutures must be sterilised before use by boiling or other means. They may be supplied by the manufacturer in an aseptic condition in sealed containers.

After an operation, the instruments are first washed in cold water, then scrubbed with warm water and soap, and afterwards sterilised by boiling. They must be carefully dried before they are put away. A little vaseline should be applied to the joints of instruments such as scissors. Instruments may be stored in a special cabinet fitted with glass shelves or in some other clean dry place, and they should be inspected periodically, if not in frequent use, in order that any signs of rusting may be detected.

Rubber articles are powdered with chalk and kept in the dark. Gloves should be quite dry before they are put away, and their insides should also be dusted with chalk to prevent them sticking together.

### **The Nurse.**

Absolute cleanliness is essential in the nursing of surgical cases, and the nurse who has to assist at an operation must carefully and conscientiously carry out every detail of the



procedure prescribed to attain this state of surgical cleanliness, not only as regards the patient and instruments but also as regards the preparation of herself for this duty.

Her clothing should always be of washing material, and a sterilised overall and cap should be worn during the operation.

The nails should be cut short and evenly trimmed.

The nurse may be required to assist the surgeon by handing him instruments, swabs or dressings, and it is of the utmost importance that her hands, which might convey infection by touching articles coming in contact with the wound, should be specially prepared. In carrying out this preparation, the sleeves should be rolled up to the elbows and the hands and forearms thoroughly washed with hot water and soap and scrubbed with a sterilised nail brush which has been kept in disinfectant lotion; special attention should be paid to the nails. It is important that the water taps, stoppers of bottles, handles of cupboards and doors, and other unsterilised articles, should not be touched by the hands after the process of preparation has been begun. After washing in soap and water, the hands are soaked in spirit lotion or rubbed with swabs wrung out in the lotion; they are then immersed in a solution of 1 in 500 biniodide of mercury, in spirit, or in some other disinfectant lotion. After the hands have been prepared, the nurse must not touch anything which has not been sterilised. Sterilised gloves should be worn.

Nurses to whom other duties have been assigned, such as attending to the anaesthetist and changing basins of lotion, must be careful not to handle any sterilised article which may be brought into contact with the region of the operation.

### **Nursing of Patient after Operation.**

When the patient has been taken to the operating room, the bed is prepared in readiness for his return. It should be remade with clean sheets, a waterproof and a draw-sheet are usually added, the pillows are removed and the blankets are warmed. A hot-water bottle is placed in the bed and should



be well covered, as the patient will probably be unconscious when brought back from the theatre and may be seriously burnt by contact with an unprotected hot-water bottle.

The patient is removed from the operating theatre on a stretcher, and it is important that he should remain in a horizontal position while being moved and that his head should not be raised, as this might cause fatal syncope.

After the patient has been put to bed, he will still be under the influence of the anaesthetic, and the nurse must remain with him until he recovers consciousness.

Some anaesthetics tend to cause vomiting. If this occurs, the patient's head should be turned to one side so that the vomit can run out of the side of the mouth into a bowl which is placed under his chin.

If the patient becomes cyanosed, or appears to have difficulty in breathing, the mouth should be opened with a gag and any collection of mucus or vomited material wiped away.

When the vomiting is severe and persistent, a teaspoonful of bicarbonate of soda dissolved in a cupful of warm water may be given. The pillows may be replaced in the bed after consciousness has been regained.

After an operation, patients often complain of distressing thirst, which may be relieved by washing out the mouth with warm water or, except in cases where nothing is allowed, by giving weak tea or some other suitable drink. When no liquids are permitted, the mouth may be cleaned with glycerine of borax or some other lotion, or a rectal saline injection may be given.

Severe pain often occurs after an operation and may occasionally be relieved by the nurse changing the position of the patient in bed, except in cases where any movement is forbidden.

Morphia or some other analgesic drug may be ordered by the doctor.

As a rule, a patient is not allowed any food until six to twelve hours after the operation, and the diet after this will be prescribed by the doctor.

Reactionary haemorrhage may occur, and the dressings should be frequently inspected for signs of bleeding. If they become blood stained, the fact should be immediately reported to the doctor.

After abdominal operations, there may be internal bleeding which can be recognised only by the general signs of haemorrhage, such as pallor, weakness of the pulse and collapse.

In cases where there is severe or prolonged shock, the patient should be kept warm and hot drinks may be given, or a rectal saline injection may be ordered.

The temperature, pulse and respiration must be taken and recorded for at least a few days after the operation.

The doctor should be informed if the patient fails to pass any urine within ten hours after the operation. An aperient should not be given until the doctor's instructions have been obtained on this point.

The posture of the patient in bed depends on the nature of the operation, the region of the body involved, and other considerations. He may lie on his back in some cases, but this position soon becomes tiring and tends to encourage the development of bed sores.

After abdominal operations, the patient is usually propped in a half-sitting position by means of pillows or a bed rest, and a bolster is placed under his knees to prevent him slipping down in the bed ; this is called **Fowler's position**. If there is no reason to the contrary, the patient may be allowed to lie on his side, usually the most comfortable posture.

## CHAPTER XV.

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### DRESSINGS AND LOCAL APPLICATIONS.

#### APPLICATION OF DRESSINGS—COUNTER-IRRITANTS.

##### Dressings.

Dressings are used to cover wounds and ulcers. They consist of various materials, those in common use being lint, wools, gauze and oiled silk, and they may be applied in either a moist or a dry state.

**Lint** is a cotton material, one surface of which is smooth and the other fluffy, the former being the one which is placed in contact with the wound. Lint may be plain and unmedicated and white in colour, or it may be medicated by being impregnated with antiseptic substance and dyed, the colour indicating the variety of antiseptic which it contains, e.g., lint impregnated with boracic acid is usually stained pink.

Surgical or absorbent **cotton wool** consists of cotton which has been freed from oil in order to render it capable of absorbing liquids. It is used for dressings, to give support to the part, to maintain even pressure, and to absorb discharge from the wound. It is supplied either plain and non-medicated, or impregnated with antiseptics and distinctively coloured, e.g., boracic wool is stained pink, sal alembroth wool containing perchloride of mercury is blue, double cyanide wool containing cyanide of mercury and zinc is usually coloured mauve, and iodoform wool is yellow.

**Swabs**, which are used to mop up blood and discharges from wounds, are usually made from absorbent wool rolled up into balls about the size of a golf ball; they may be enclosed in gauze.

Ordinary non-absorbent wool is used for padding splints; it is more suitable and less expensive than the surgical variety.



**Gauze** is an absorbent cotton material resembling cheese cloth. It may be plain, non-medicated and white, or impregnated with antiseptics and coloured as described above.

Oakum, tow and peat moss are other materials which are sometimes used for dressings.

**Oiled silk, jaconet, and gutta percha (G.P.) tissue** are materials which are impervious to liquids. They are used to cover wet dressings in order to prevent loss of moisture from absorption and evaporation and with this object they should be a little larger than the dressing over which they are applied. They are also sometimes applied directly over a raw surface to prevent the dressing adhering to the wound.

Powders, such as boracic acid and iodoform, are sometimes dusted directly over a wound. Ointments are spread on lint or linen which is applied to the part and secured by a bandage.

A **graduated compress** is a form of dressing which is used to check haemorrhage in certain parts, particularly the palm of the hand. It consists of a number of pieces of lint of similar shape but of gradually increasing size placed one above the other to form a cone-shaped dressing. The apex of the cone is applied directly on the wound, and the hand is closed and tightly bandaged in order to keep the dressing in position and to exert pressure on the bleeding point.

Clean or sterilised dressings should be stored in drums or other airtight containers in order to prevent contamination and infection with micro-organisms from exposure to the air.

Rubber **drainage tubes** are inserted into wounds from which there is a discharge of blood or pus, and are covered by the dressing. They are kept in position and prevented from slipping into the wound by transfixing the protruding part of the tube with a safety pin or by stitching the tube to the skin.

The dressing is kept in position by a bandage. The application of the various forms of bandage is described in the Preliminary Handbook.

### Application of Dressings.

It is essential that the principles of asepsis should be strictly carried out in applying dressings. The nurse must wash and disinfect her hands. The necessary instruments, such as scissors, dissecting and sinus forceps, probe, etc., should be sterilised and immersed in antiseptic lotion, and the dressing materials should be cut into the required sizes on a clean towel by sterilised scissors. The sterilised dressings and the bandages are placed in readiness on a disinfected trolley or on a tray covered with a sterilised towel; they are then covered with another towel. Swabs, made by rolling up pieces of cotton wool, are placed in a basin containing antiseptic lotion or sterilised water. A basin will also be needed to receive the soiled dressings and used swabs.

The patient should be placed in a comfortable position and in a good light and his clothing folded so that the part to be dressed is sufficiently exposed. The bandage fixing the soiled dressing should be removed. When the preparations have been completed, the nurse must again wash and disinfect her hands and she must be careful afterwards not to touch any unsterilised articles. A sterilised towel should be laid round the part and the soiled dressing removed with forceps which should be discarded and not used again until they have been sterilised. Drainage tubes are also removed and should be washed and sterilised by boiling before they are replaced. The wound is cleaned by means of swabs wrung out in antiseptic lotion, and the surrounding skin is also cleaned by wiping outwards from the edge of the wound. The clean sterilised dressing is then removed from the container or tray, and a piece large enough to cover the wound completely is placed evenly over the part. This is covered by layers of cotton wool of larger size, and the dressing is secured by a bandage. In the case of mental patients it is advisable that the end of the bandage should be fixed by stitching and not by pins.

Antiseptic lotions used to clean wounds or for dressings should be diluted to the prescribed strength, as unduly strong antiseptics damage the tissues and impair their capacity for

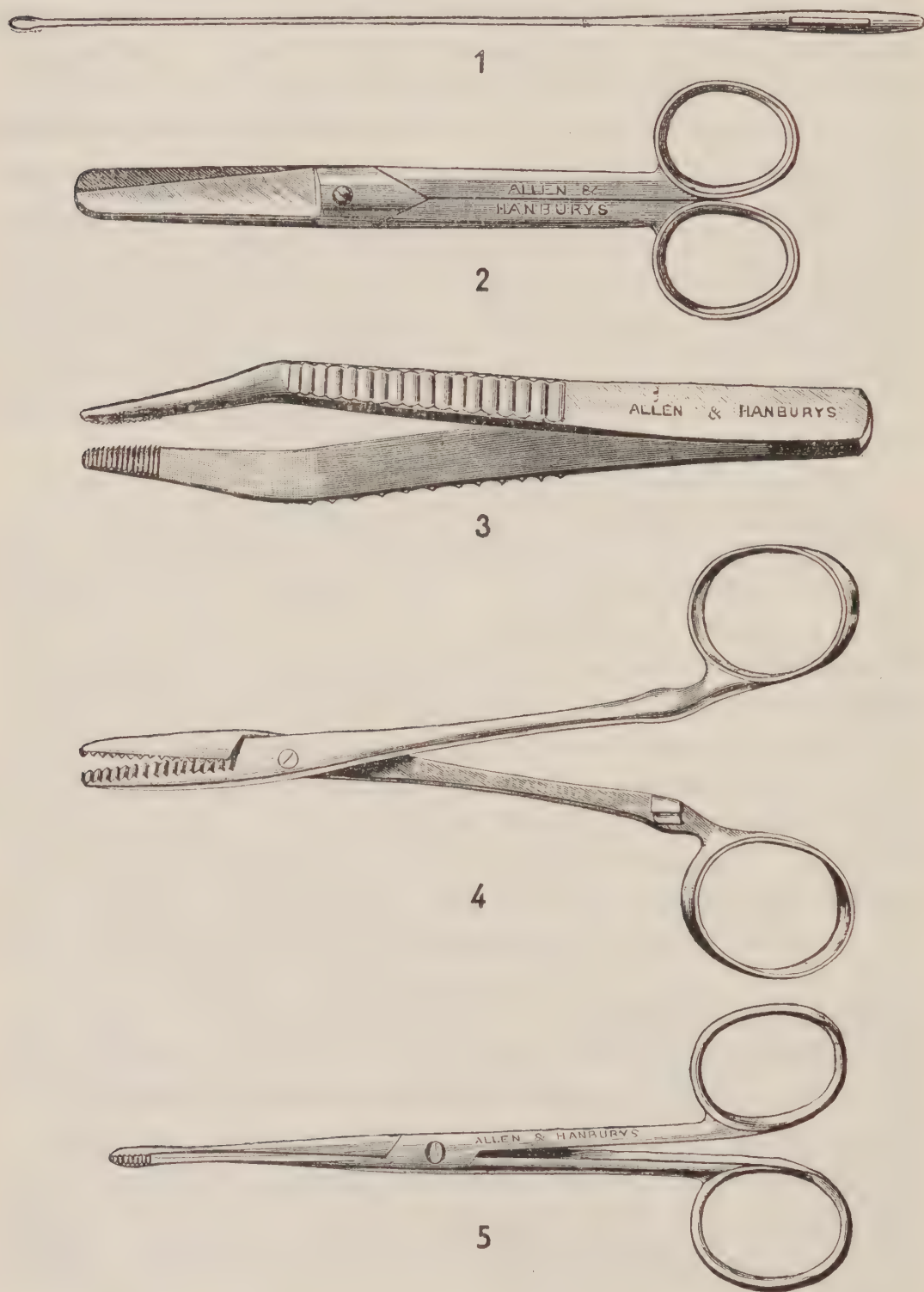


FIG. 34.—INSTRUMENTS FOR WARD DRESSINGS.

1, Probe ; 2, Scissors ; 3, Dissecting Forceps ; 4, Artery Forceps ; 5, Sinus Forceps.



healing. The dressing may be dry or moist. A **dry dressing** is used chiefly for clean, healing wounds, and usually consists of plain sterilised gauze or gauze impregnated with an antiseptic. A **wet dressing** consists of lint or gauze soaked in antiseptic lotion and wrung out before being placed in position over the wound ; it is covered with a piece of jaconet or G.P. tissue larger than the lint or gauze in order to prevent drying of the dressing, and a layer of cotton wool is applied over the jaconet.

### **Local Applications.**

Local applications are used to relieve pain and diminish inflammation and congestion in the part to which they are applied.

They may be either cold or hot and in a dry or a moist state and they may be impregnated with various drugs.

### **Cold Applications.**

These are used to reduce congestion and effusion and to check subcutaneous capillary haemorrhage in conditions such as sprains and bruises.

**Cold Compress.**—A folded piece of lint is soaked in iced water, wrung out and applied to the part ; when it has become warm it is removed and replaced with another piece of lint wrung out in iced water. The piece removed is placed in the iced water so that it may be used again to replace the second piece when that has become warm, the pieces of lint being changed at frequent intervals in order to keep the part constantly cold.

**Evaporating Dressing.**—A fold of lint is soaked in an evaporating lotion, such as water mixed with methylated spirit, or in lead and opium lotion, and is wrung out and applied over the inflamed or painful area. It is left uncovered and exposed to the air in order to promote rapid evaporation which lowers the temperature of the part.

**Ice Poultice.**—This is sometimes used to relieve pain and inflammation in cases of pneumonia. A piece of G.P. tissue twice the size of the required poultice is covered with a layer

of cotton wool half an inch smaller on every side ; small lumps of crushed ice are then spread over one half of the surface of the wool and some salt is sprinkled over the ice. The other half of the wool and G.P. tissue is then folded over the half covered with ice and the free borders of the G.P. tissue are joined by sealing them together. This may be done by applying chloroform or turpentine to the half inch border not covered by the wool and ice. The poultice is applied to the chest either in a flannel bag or wrapped in a piece of lint. The poultice should be renewed when the ice has melted.

**Icebag.**—A rubber bag is filled with pieces of ice about the size of a walnut and a little salt is added to make the cold more intense. The bag is covered with a piece of lint or flannel before it is placed on the skin. It should be allowed to rest only lightly on the part to which it is applied, and it may be slung from a cradle, or from the frame of the bed, when applied to the head.

### **Hot Applications.**

Heat dilates the capillary vessels of the skin and stimulates the activity of the tissues. It increases the migration of leucocytes, promotes suppuration in states of inflammation, and relieves pain in muscular spasm.

Heat may be applied in either a dry or a moist state, the latter being usually more effective. Dry heat is used in the form of hot wool, hot-water bottles, bran or salt bags, or by means of an electric pad. Moist heat is applied in the form of fomentations and poultices, and by hot baths and packs.

**Fomentations and Stupes.**—A fomentation consists of a piece of flannel or lint wrung out in boiling water and covered with waterproof tissue and wool. In order to prepare a fomentation a wringer is required. This may be made out of a piece of strong towelling about two feet long and twelve inches wide. A deep hem is made at both ends of the towelling and wooden rods or sticks are inserted through the hems. An ordinary towel may be used if a wringer is not available. When a fomentation has to be applied, the patient's clothing should be folded back so as to expose the part, and pieces of



G.P. tissue or jaconet and of wool cut to the required size are placed in readiness. A piece of lint or flannel twice the size of the area to be fomented is folded double and placed on the middle of the wringer which is spread over a basin with the ends containing the rods hanging over the side. Boiling water is poured over the lint in the wringer and, after the lint has been soaked for a few seconds in the basin, the wringer containing the piece of lint is removed and the excess of water wrung out by twisting the rods in the ends in opposite directions. The wringer is then taken to the patient's bedside and untwisted, the lint is removed, shaken out to free it from steam, and applied to the part after its temperature has been tested on the back of the nurse's hand. It is quickly covered with a piece of jaconet about an inch larger all round and by a thick layer of cotton wool to prevent loss of heat, and is secured in position by a bandage. A fomentation should be renewed every two hours.

If there is a wound or a breach of surface of the skin the fomentation is called a surgical fomentation and forms a dressing, and antiseptic precautions must be observed in its preparation and application.

A boracic fomentation is made with lint impregnated with boracic acid or by using boiling boracic acid lotion instead of plain water. Other antiseptic lotions may also be used for making fomentations.

A **stupe** is a fomentation on which turpentine or some other medicament has been sprinkled. A turpentine stupe is used to relieve abdominal distension and discomfort. It is made by sprinkling about one drachm of turpentine over the flannel before it is soaked in the boiling water. The edge of a turpentine stupe should be lifted about ten minutes after it has been applied to see if the skin is unduly reddened. It is usually allowed to remain on the abdomen for twenty to thirty minutes and, after it has been removed, the part should be covered with a simple fomentation or a layer of hot wool. Opium and belladonna stupes are made by sprinkling about half a drachm of the tincture of opium or belladonna on the flannel after it has been wrung out in hot water.



**Poultices.**

Moist heat may also be applied in the form of a poultice. The poultice may consist of linseed meal, starch, bread or other substances.

**Linseed Poultice.**—The following articles and materials are required for making a linseed poultice, viz., a piece of linen, teased out tow, lint or flannel cut to the required size, a spatula or a table knife in a jug of hot water, a basin, two dinner plates, a board or wooden table, crushed linseed meal and boiling water. If linen or flannel is used the corners should be cut in order that the sides may be folded over neatly. If tow is used it must be teased out into a flat piece about two inches larger all round than the required poultice.



FIG. 35.—SPATULA.

The meal, basin, plates and other articles should be heated before starting to make the poultice. A sufficient quantity of boiling water is poured into the basin and the meal is then sprinkled into the water with one hand, the other being used to stir the mixture of meal and water. The meal is gradually added and the mixture stirred until it forms a thick paste, stiff enough to allow a spoon to stand upright in it. The paste is then turned out from the basin and spread quickly and evenly with the spatula to a thickness of one-quarter to half an inch on the linen or other material; the spatula is dipped in the hot water at intervals in order to prevent the meal sticking to it. The borders of the lint are left uncovered for about an inch all round and, when the plaster has been spread, they are folded over to cover the edges of the meal. The poultice is then rolled on itself, or folded and taken to the patient between the two hot plates. It should be applied directly to the part as hot as it can be borne (the nurse may test the temperature by placing it against the cheek), covered with a thick layer of wool and bandaged in position. Poultices should be changed every four hours.

**Mustard Poultice.**—Mustard may be added to an ordinary poultice to produce an irritant effect. The mustard should be thoroughly mixed with the dry meal in the proportion of about one to seven parts for an adult, or it may be made into a paste with a little tepid water and added to the boiling water before the meal is sprinkled in. It is applied to the skin over a piece of gauze or muslin, and it should not be left in position too long as it may cause blistering.

**Charcoal Poultice.**—This is sometimes used in the treatment of offensive ulcers such as bedsores. The charcoal is mixed with linseed meal in the proportion of about one part to three, and the poultice is applied to the ulcer over a piece of sterile gauze.

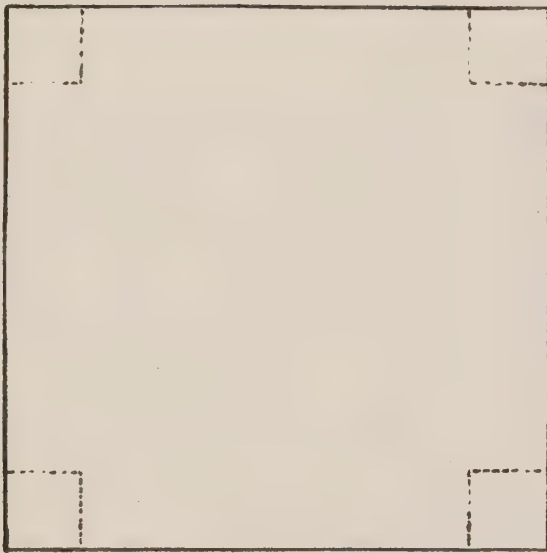


FIG. 36.—DIAGRAM OF LINEN FOR POULTICE.  
(Cut corners at dotted lines.)

**Proprietary preparations,** in the form of pastes composed of a special variety of clay mixed with glycerine and certain drugs, are sometimes prescribed instead of poultices. The paste is heated before being applied to the skin and is covered with a layer of wool to retain the heat.

**Starch Poultice.**—This may be used to treat sores and remove scabs, especially on the scalp. Two tablespoonfuls of starch and one teaspoonful of boracic acid powder are mixed into a paste with cold water; about one pint of boiling water

is added and the mixture stirred until it forms a thick paste, which is spread on old linen and applied to the skin when cool.

**Bread Poultice.**—This is made by boiling a piece of stale bread in water for some minutes ; the water is then strained off through muslin, and the hot bread pulp is spread on a piece of linen and applied to the skin.

### **Counter-irritants.**

Counter-irritants are used to produce irritation of the skin with the object of relieving pain and congestion in the deeper tissues and organs by irritating the peripheral nerves and stimulating the circulation. Mustard, cantharides, croton oil, iodine and other drugs are applied to produce counter-irritation, and cupping is sometimes used for the same purpose.

**Mustard Plaster.**—Mustard, either pure or diluted with about twice its quantity of flour, is mixed with cold or tepid water to form a thick paste which is spread on a piece of linen cut to the required size. The part is washed and the plaster applied to the skin either directly or over a piece of gauze. As a rule it should not be allowed to remain on the skin for longer than about fifteen to thirty minutes, and it may be removed sooner if the patient complains of severe smarting or the skin becomes unduly reddened. After removal of the plaster, the skin should be smeared with ointment or oil.

A mustard leaf, consisting of thick brown paper impregnated with mustard, may be used instead of a plaster. The mustard leaf is moistened in tepid water before being applied.

Tincture or liniment of iodine may be painted on the skin to produce counter-irritation, and liniments composed of turpentine, camphor or other substances are also rubbed on the skin to produce irritation in some conditions.

**Blisters.**—Plasters and fluids containing cantharides are used to produce more intensive counter-irritation. They withdraw serum from the blood and cause the formation of blisters. The area of skin to which the agent is to be applied



is washed with soap and water and, if necessary, shaved. If a plaster is used, it should be cut to the size ordered by the doctor and warmed to make it adhere to the skin. A piece of cotton wool is placed over the plaster and kept in position by means of a loose bandage or a piece of strapping. If a blistering fluid (liquor epispasticus) is used, a ring of vaseline should be smeared round the area to be blistered to prevent the fluid blistering the surrounding skin. The fluid is painted on the skin with a brush and allowed to dry, and two or three coats are usually applied. The part is then covered with cotton wool and lightly bandaged.

The skin should be inspected about four hours after the application of the blistering agent and at frequent intervals afterwards. After the blister has formed, usually in about six hours, it may be covered with a sterile piece of wool till the fluid is re-absorbed or it may be punctured and dressed. When it is to be punctured a piece of sterile wool is placed under the lowest part of the blister which is snipped with sterilised scissors, the fluid being allowed to run out and soak into the wool. If the fluid were to run over the skin other blisters would be produced. An ointment of boracic acid or a sterile dressing should be applied over the punctured blister.

If it is desired to prolong the irritation the blistered skin is cut away with antiseptic precautions and the raw surface left is dressed for two or three days with savin ointment on a piece of lint the exact size of the raw surface.

Ammonia, acetic acid and chloroform may also be used as blistering agents. Croton oil is a powerful irritant and causes the formation of pustules. Two or three drops may be rubbed on the skin with a small piece of flannel to produce a crop of blisters. It may be diluted with olive oil to make it less irritating.

**Dry and Wet Cupping.**—By this method, hyperaemia of the skin or actual bleeding is produced by the application of cups in which a partial vacuum has been created. Special cupping glasses are used or, if these are not available, wine glasses may be applied. The rim of the glass is smeared with

vaseline, and small pieces of blotting paper soaked in spirit are placed at the bottom and set alight; the mouth of the glass, while the spirit is still burning, is placed tightly over the part. This smothers the flame which dies out almost immediately. The skin tissues swell and rise into the cup when the hot air inside it cools and contracts, causing a partial vacuum. The cup is left in position for a few minutes and then removed by inserting the fingernail under the edge.

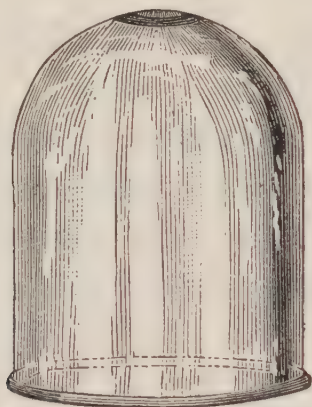


FIG. 37.—CUPPING GLASS.

In wet cupping the skin is first dry cupped as described above, then slightly scarified or incised with a scalpel and cupped again. Blood will flow into the glass from the cuts. Antiseptic precautions must be observed in performing this operation and the area cupped must afterwards be covered with a dressing.

## CHAPTER XVI.

### SPLINTS.

Splints are rigid appliances which are used to support a limb or other part of the body. They are employed chiefly in the treatment of fractures of the limbs, but may be applied in other conditions where it is necessary to prevent movement. In cases of fracture they keep the limb at rest and the bones in correct position after the fracture has been reduced, and they prevent further injury to the soft tissues such as might be caused by the loose broken end of a bone piercing the skin and converting a simple into a compound fracture.

Splints may be classified as natural, improvised and surgical. Bones and ligaments act as natural splints, and a fractured bone may be kept in position by an uninjured one, e.g., the tibia may prevent displacement of a fractured fibula, and the broken ends of a rib may be kept in position by the muscles and ligaments connecting it with other bones. Improvised or temporary splints such as walking sticks or umbrellas, broom handles, a folded newspaper, cardboard, etc., are used in the emergency or first-aid treatment of fractures.



FIG. 38.—GOOCH SPLINTING.

Surgical splints usually consist of wood, either in pieces of suitable length and breadth, or in special shapes designed to fit the part to which they are to be applied. Splints are also made of metal, poroplastic felt and plastic substances, such as plaster of Paris, which are moulded while in a wet state and become rigid when dry.



**Gooch's splinting** consists of a number of narrow strips of wood attached to a cloth foundation so that they form a splint which is rigid in one direction but can be bent in the other. The splinting can be cut to any required size.

### Special Splints.

The common forms of special splints are :—

**Liston's Long Splint.**—This is a long wooden splint reaching from the axilla to below the foot, with notches at its lower end to which the foot is attached by bandages. It is used in cases of fracture of the femur.



FIG. 39.—LISTON'S SPLINT.

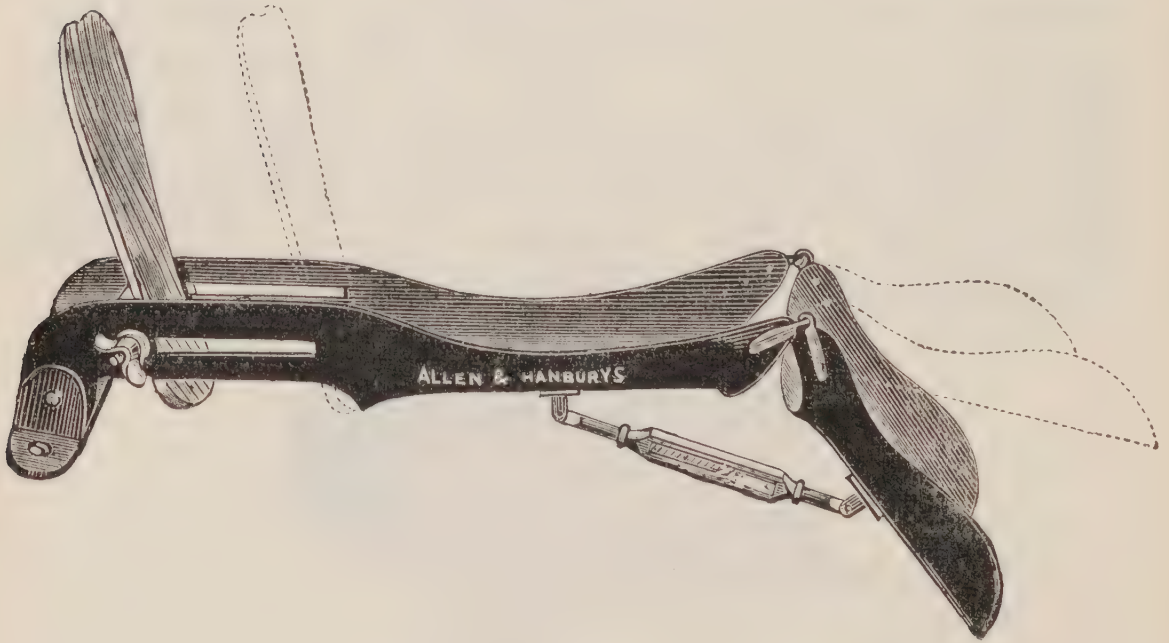


FIG. 40.—MACINTYRE'S SPLINT.

**MacIntyre's Splint.**—This is used for fractures of the femur or tibia. It consists of a shaped metal splint in two parts with an adjustable foot-piece. The two parts are connected by a hinge, and the angle between them can be adjusted by means of a screw.

**Hodgen's Splint.**—This consists of a metal frame to which strips of flannel are attached to form a hammock on which the limb is slung. It is used for fractures of the femur, and the splint is suspended from an extension apparatus.

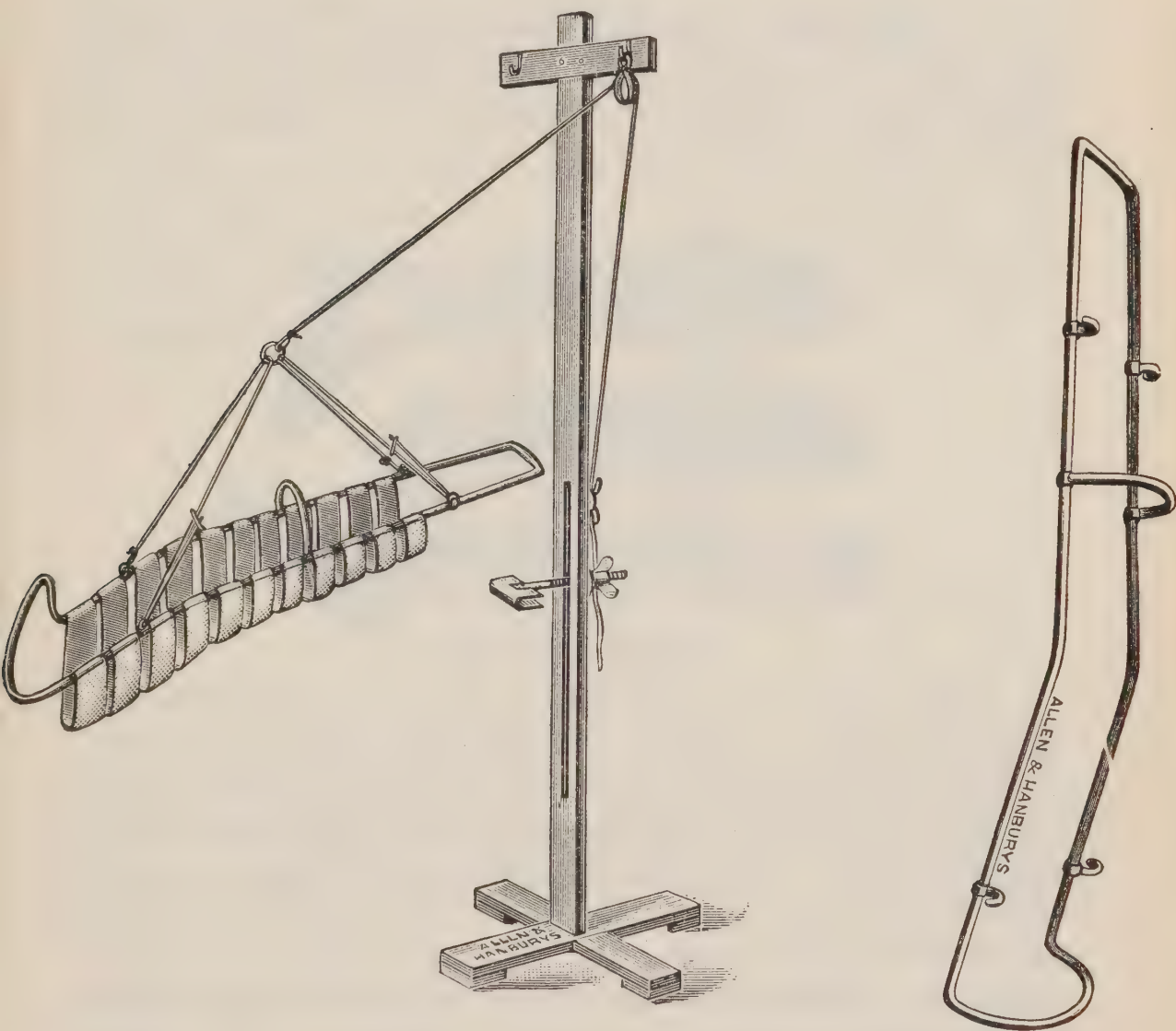


FIG. 41.—HODGEN'S SPLINT.

**Cline's Splints.**—These are for fractures of the tibia and fibula. They consist of two pieces of wood, one for the outer and the other for the inner side of the leg and foot. Their inner surfaces are hollowed to fit the limbs, and there are openings at their lower ends to prevent pressure on the malleoli, the bony projections of the tibia and fibula on each side of the ankle.

**Carr's Splint.**—This is used in cases of Colles's fracture, in which the lower end of the radius is broken. It consists of a wooden splint with a rounded hand-piece which is placed at an angle to the main splint. It is applied on the palmar aspect and another splint is fixed to the back of the limb.

A **rectangular** or **L-shaped splint** is used for fractures in the region of the elbow. The limb is flexed to a right angle and the splint is applied on the inner side of the arm and the palmar aspect of the forearm.

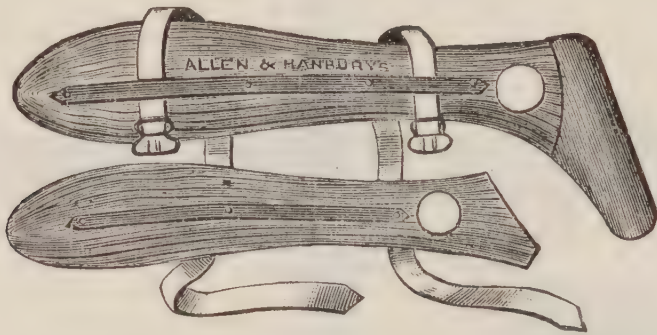


FIG. 42.—CLINE'S SPLINT.

### Padding of Splints.

Metal and wooden splints must be padded before they are applied in order to prevent the pain and injury which would be caused by the prolonged pressure of a hard material on the surface of the skin. It is important that the pads should be carefully made. They should be firm and smooth and of uniform thickness, sufficient to be comfortable and to prevent the pressure of the wood being felt by the patient, but not so thick as to impair the rigidity and feeling of support given by the splint.

*Method of Padding.*—The materials and articles needed are unbleached calico, lint or muslin, non-absorbent wool, tow, needle and strong thread, pins, scissors and a table. A piece of the calico is cut about four times wider and six inches longer than the splint to be padded and is laid on the table. Layers of wool are placed down the middle of the piece of calico to a depth of about two inches, leaving a margin of about two inches of calico uncovered all round. Layers of tow, well



teased out, are then placed over the wool until the thickness of the loose padding is about four inches. When pressed, it will be only about two and a half inches thick. The edges of the calico are then folded over till they overlap in the middle of the padding, and are first pinned and then stitched together, the padding being included in some of the stitches and a thick cross-bar of thread being left at each end. The pad is then laid on the splint with the seam against the wood and sewn firmly in position by a double row of stitches, one passing diagonally across the back of the splint from top to bottom and the other, crossing the first, from bottom to top. The ends of the padding are trimmed off, the calico folded over the end of the splint, and the corners firmly sewn to the thread cross bars at the ends.

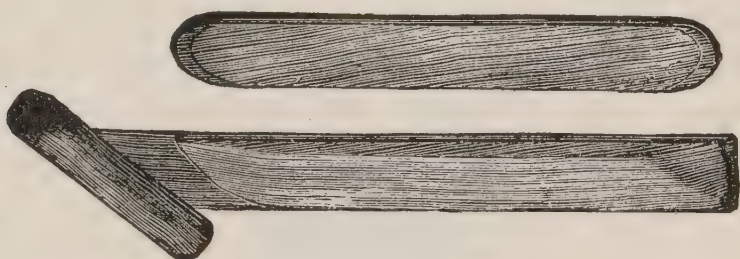


FIG. 43.—CARR'S SPLINT.

If the splint is jointed, i.e., in two parts, each part must be padded separately and the hinge left free. If there is reason to anticipate that the splint will become soiled with discharges or urine, a piece of jaconet may be sewn over the calico.

Splints are kept in position on the limb by a flannel bandage or by straps and buckles or by adhesive plaster.

A patient to whom splints have been applied should be specially observed in order to detect any signs of undue pressure or obstruction of the circulation. The pressure of inadequately padded or too tightly applied splints may cause pain, ulceration and even gangrene of a limb. Coldness and a blue colour of the extremities, e.g., the fingers and toes, are an indication that there is some interference with the circulation of the part.

### Extension.

In some varieties of fracture, especially those of the femur, it is necessary to maintain a continuous pull or traction on the limb below the fracture in order to keep the two fragments of the bone in position and prevent them overriding each other. The traction is applied by means of an extension apparatus. A band of strong adhesive strapping is attached to each side of the limb and is kept in position by spiral strips applied from below upwards, the bony prominences on each side of the ankle being protected by pads of wool. The band of strapping should be long enough to reach from below the fracture on each side and to form a loop extending about four inches below the foot. A piece of wood which has a hole bored through its centre is placed inside the loop of strapping with the exact centre of the loop over the hole in the piece of wood which should be made to adhere to the strapping. A cord to which a weight is attached is inserted through the hole in the piece of wood and strapping, its end knotted to prevent it slipping out, and the cord passed over a pulley fixed to the foot end of the bed. A flannel bandage may be applied round the limb to keep the strapping in position. The extension weight required varies from six to twelve pounds; ordinary scale weights may be used or bags or tins containing shot or sand.

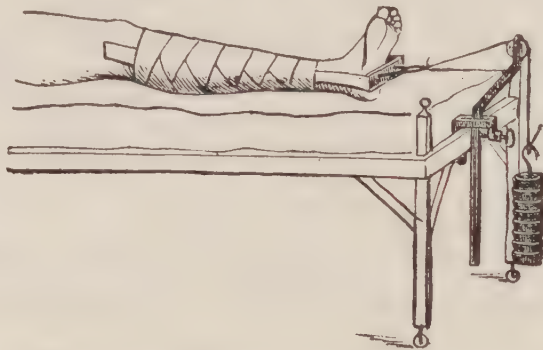


FIG. 44.—EXTENSION APPARATUS.

**Counter-extension** to the weight is obtained by raising the foot of the bed about four inches above the floor by means of wooden blocks. The weight of the patient's body which inclines towards his head exerts a pull in a direction opposite to that of the weight at the foot of the bed, and also keeps the upper fragment in position and prevents the patient being pulled down in bed by the weight.

The nurse in charge of a patient to whom an extension apparatus has been applied should see that the weight is constantly pulling in the right direction and is not in contact with anything, and also that the foot or splint is not pressing on the end of the bed as a result of the patient having slipped down.

In cases of fractured femur, a long Liston splint may be applied on the outer side of the limb with shorter splints on the inside of the thigh.

A cross bar to which the end of the long splint is fitted, or sandbags, to prevent rotation of the limb, may be needed.

A **bed rest** may also be required when extension is used. This consists of a wooden frame with a back rest which can be adjusted to the most comfortable angle of elevation. A chair turned upside down, a stool or a number of pillows may also be used as an improvised bed rest.

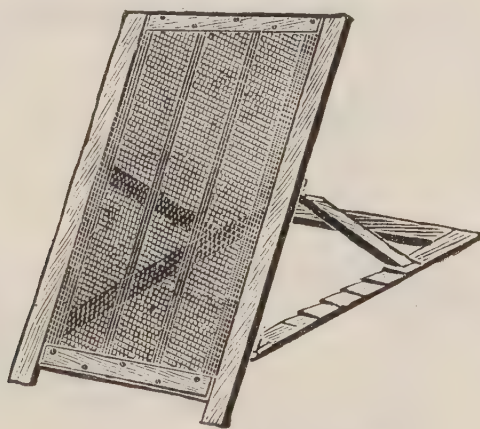


FIG 45.—BED REST.

**Bed cradles** are appliances for removing the pressure of the bedclothing from a part of the body. They are used chiefly in cases of fracture and after abdominal operations. They usually consist of a frame of wire hoops fixed in wooden side pieces. Cradles may be improvised by using a three-legged stool, or a box with two of its sides cut away, or the bedclothing may be pierced with a corkscrew and the corkscrew suspended from a nail in the ceiling or wall by a piece of string attached to its handle. The point of the corkscrew inside the bedding should be protected with a cork.



### Plastic Materials for Splints.

**Poroplastic felt** is a material used for splints which becomes soft and plastic when immersed in warm water and rigid again when cooled. It can be moulded to fit the part to which it is applied.

Plaster of Paris, water-glass and starch may also be used for splints. **Plaster of Paris** is applied either by means of bandages or of splints made by soaking flannel in a mixture of plaster and water.

The bandages are prepared by rubbing plaster of Paris powder thoroughly into the meshes of a muslin bandage, usually two and a half to three inches wide. This may be done by hand by the nurse, but plaster of Paris bandages are usually supplied ready made in tins. The prepared bandages must be stored in airtight containers as plaster of Paris deteriorates rapidly when exposed to moisture.

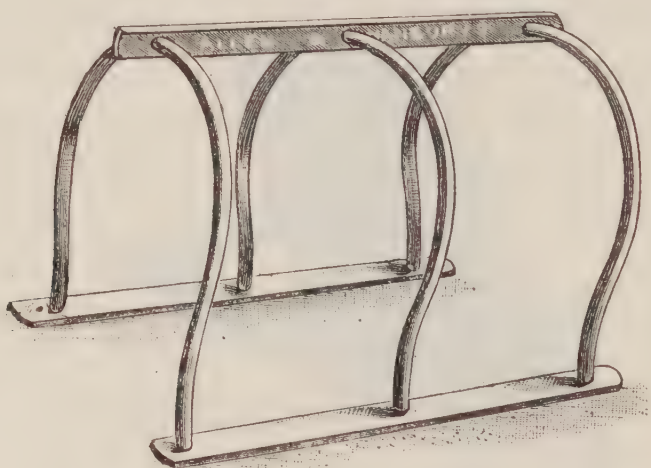


FIG. 46.—BED CRADLE.

When the bandages are to be applied, a basin should be provided containing warm water in which to soak the bandages; lint or wool, cotton and flannel bandages and some loose plaster of Paris powder will also be needed. A waterproof sheet should be placed under the patient and the floor covered with old newspapers. The plaster bandages are placed, standing on their ends, in the basin of water; the part to be bandaged is covered with lint or a layer of wool and a flannel bandage may be applied. The plaster bandages are

then removed from the basin, lightly squeezed to remove the excess of water, and the part bandaged with them. Some of the loose plaster of Paris is mixed with water to form a thick cream, and the mixture is rubbed over the whole splint after the last bandage has been applied.

Hot-water bottles may be placed in the bed near the splint to hasten the process of hardening.

After a plaster splint has been applied, the nurse must carefully watch the patient for some time in order that she may notice any sign of pain or interference with the circulation which might result from the bandage having been applied too tightly.

The part to which a plaster of Paris splint has been applied **must** not be moved until the plaster has firmly set and is hard and rigid.

If there is a wound or ulcer on the part to which a plaster splint is applied, an opening or window may be made by placing a chip pill box over the wound and applying the plaster bandages round the box and not over it. When the plaster has dried the box is removed and the wound can be dressed through the opening left.

Plaster of Paris bandages are removed by cutting the plaster splint from top to bottom with shears or scissors designed for this purpose. Dilute hydrochloric acid may be applied on the part to be cut in order to soften the plaster.

Plaster of Paris splints, known as Craft's and Bavarian splints, are also made by soaking pieces of thick house flannel, cut and shaped for the part to which they are to be applied, in a mixture of plaster and water, or by rubbing the mixture on the flannel. They are usually made in two halves, or a hinge is left at the back by which the plaster casing of the limb can be opened if necessary.

## CHAPTER XVII.

### PHYSIOTHERAPY.

#### MASSAGE—MOVEMENTS—ELECTRICITY.

Physiotherapy is treatment by means of agents such as massage, exercises, electricity and baths.

#### **Massage.**

Massage, or rubbing, is a method of treatment in which the operator rubs, kneads or otherwise manipulates the patient's skin or deeper tissues with her hands and fingers. Massage acts both as a stimulant and as a sedative to the part to which it is applied; it stimulates the circulation and exercises the muscles, relieves local pain and congestion, disperses exudations and fibrous adhesions, and improves the nutrition of a paralysed limb. It is used chiefly in the treatment of fractures, inflammation of muscles and fibrous tissue, paralysis, to restore movement in stiff joints, and to promote sleep.

The part is rubbed with the nurse's hands or fingers which should be lubricated with oil or powder. The hand should be kept continuously in contact with the skin except in the form called *tapôtement*, and the movements should be made from the wrist and in the direction of the venous circulation, i.e., from the extremities towards the trunk.

Tender and inflamed parts should be only lightly rubbed at first and, if pain is increased, the treatment should be suspended until further instructions have been obtained from the doctor. As a general rule the massaging may be continued for twenty or thirty minutes at one time, but it may be repeated two or three times a day.

There are different varieties of massage according to the kind of manipulation employed. The chief varieties are as follows :—

(1) **Effleurage or Stroking.**—This consists of a slow to and fro stroking of the skin with the palms of the hands from the extremities towards the trunk and back again, the return



stroke being made more lightly and rapidly. The movements are continued for two or three minutes at a time. Effleurage is usually applied at the beginning and end of each treatment. It stimulates the circulation, acts as a sedative and promotes sleep.

(2) **Pétrissage or Kneading.**—In this form a piece of muscle is picked and squeezed and rolled between the thumb and fingers or the fingers and base of the palm. This may be done with both hands simultaneously. Pétrissage promotes the absorption of exudation and helps to break up adhesions. In constipation the abdominal wall may be massaged by this method to stimulate the colon; the kneading should be begun over the ascending colon and follow the course of the large intestine.

(3) **Friction.**—The rubbing is done by circular movements with the tips of the fingers or thumb in this form; the friction should usually follow the course of a nerve, and the pressure applied may be light or heavy; it is used to soothe the nerves and to promote the absorption of exudation.

(4) **Tapôtement or Tapping.**—In this method the skin is lightly flicked with the fingers, pounded with the ulnar edge of the hands or with the loosely clenched fist, or slapped with the hands. The process stimulates the muscles and nerves.

### Movements.

A course of movements is often employed in association with massage in the treatment of certain conditions, particularly of the limbs. These movements are described as passive or active.

**Passive movements** are usually applied first, and are used chiefly for their effect on joints which have become stiff and painful after injuries such as sprains, dislocations and fractures. The movements are carried out by the nurse, the patient remaining passive or inert and not attempting to make the movements himself. The ligaments and tendons are stretched and adhesions which limit the movements of joints are broken down.

When passive movements have ceased to cause pain, **active or re-educative movements** may be employed. In this form the patient either carries out **free movements** without interference or assistance by the nurse, or he makes what are called **resistive movements**. In these the nurse opposes the movements which the patient is attempting to make, or the patient resists movements made by the nurse. The range of movements obtained by this treatment may be only small at first, but continued and regular treatment may gradually increase the range until normal mobility is regained.

### Electricity.

Electricity in various forms is used in the diagnosis and treatment of disease. Its application requires special training and experience, but the nurse should be acquainted with the meaning of the terms and the various methods employed in treating patients by this means.

The forms of electrical current used in medicine are chiefly the **galvanic** in which the current flows constantly in the same direction from the positive to the negative pole, and the **faradic**, in which the current is made and broken in rapid succession.

The current is conveyed from the electric battery along wires to metal pads, called **electrodes**, which are covered with wash leather or with folds of lint or flannel, and it is transmitted to the body by applying the pads to the skin, one being placed on the part to be treated and the other on the back or some other part of the body. Before they are applied, the pads must be moistened with salt solution, and the skin should have been well washed with soap and water. The strength of the current can be regulated or graduated by moving a pointer on a scale which is fitted to the battery.

Muscles can be made to contract by stimulating the nerves or the muscle fibres by an electric current. With the galvanic current, the contraction occurs when the contact is made or broken. Normally contraction is greater when the negative pole is placed over the muscle to be tested. When the muscle fibres are degenerated, the contraction of the muscle is

diminished or lost and is more easily obtained by applying the positive pole over it. With the faradic current, either the positive or the negative pole may be applied over the part to be tested, and the interrupted current causes repeated contraction of the muscle. When the muscle is degenerated it responds more slowly to the faradic current and later fails to contract. These reactions of muscle to electric currents are used to diagnose the condition of the muscle fibres.

For purposes of treatment, particularly in diseases of the nervous system, electricity is used to maintain the vitality of wasted muscles, to relieve pain, and as a general stimulant or tonic.

Wasted muscles may be exercised and kept alive by stimulating them to contract by the application of the galvanic or faradic currents, the strength of the current and the duration of its application being regulated according to instructions.

Neuralgic pain may sometimes be relieved by applying a current over the course of the affected nerve, the positive pole of the galvanic current being placed over the painful part.

**High frequency currents**, in which the current is broken hundreds of thousands of times a second, are applied to the whole body by means of special apparatus. They do not produce contraction of muscles, but act as a general stimulant, and they are used in the treatment of debility, rheumatism and skin diseases.

Electricity may be applied to the whole body by means of an **electric bath**. The electrodes are placed in an earthenware or porcelain bath which is filled with water at a temperature of about 100° F. The patient is placed in the bath before the current is switched on, and must not be allowed to touch anything while in the bath. The strength of the current should be gradually reduced before he gets out of the bath. Local electric baths for the electrical treatment of the limbs are also used.



**Diathermy** is a form of high frequency current which can be passed into the deeper parts of the body. It is used to relieve pain and to raise the temperature, locally or generally.

**Electrolysis** is used for the destruction of naevi (birth marks) and of superfluous hairs: the electrodes consist of two needles which are inserted into the skin and the affected tissues.

**Ionisation** is a process by which drugs are introduced into the tissues by electricity. The lint covering the electrodes is soaked in a solution of the drug and the pad is applied closely to the skin for fifteen to thirty minutes.

## CHAPTER XVIII.

### **PHYSIOTHERAPY**—(Continued).

#### BATHS—SPONGING—PACKS.

Treatment by means of baths, douches, sponging and packs, in which water is used as the therapeutic agent or medium, is termed **hydrotherapy**.

#### **Baths.**

Baths may be classified according to the temperature of the water, the purpose for which they are given, or the medicine which they may contain.

The terms cold, tepid, warm and hot are used to denote the different degrees of temperature of a bath.

The temperature of a cold bath varies from  $40^{\circ}$  to  $65^{\circ}$  F.

The temperature of a tepid bath varies from  $65^{\circ}$  to  $90^{\circ}$  F.

The temperature of a warm bath varies from  $90^{\circ}$  to  $100^{\circ}$  F.

The temperature of a hot bath varies from  $100^{\circ}$  to  $110^{\circ}$  F.

Cold baths and sponging with cold or tepid water are used to reduce the temperature in fever and also as a general tonic or a stimulant to the circulation. Warm baths are given for cleansing purposes, to diminish excitement and to procure sleep and for the treatment of septic wounds and extensive burns. Hot baths may be prescribed to cause sweating and the elimination of toxins from the body, to relieve pain and muscular spasm and to treat convulsions in children. Baths at different temperatures containing various substances in solution are used as a means of applying or administering medicines.

### Cold Baths.

A cold bath may be prescribed to reduce the temperature in cases of hyperpyrexia occurring in typhoid fever or other diseases. This method of treatment is sometimes effective, but it is a drastic measure and there is a risk of it causing dangerous collapse.

A portable bath is placed at the side of the bed. It is partly filled with water at a temperature of between 70° and 80° F., and a thermometer is immersed in it. A watercushion should be placed on the bottom of the bath, and a folded towel at the head to form a pillow. The patient is given a stimulant, his clothing is removed, and his head wrapped in a cloth soaked in iced water. He is covered with the top sheet and

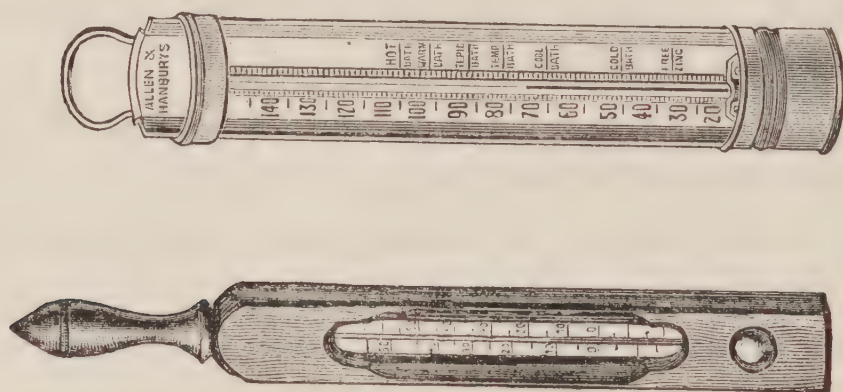


FIG. 47.—BATH THERMOMETERS.

gently lowered into the bath by four or more nurses, the bottom sheet, which must be a strong one, being used as a sling. He should be kept in a horizontal position as far as possible while being moved on account of the risk of fainting. He is placed in the bath with his buttocks resting on the cushion and his head on the folded towel. The temperature of the water is then gradually reduced to about 65° F. by the addition of iced water. The patient's temperature should be taken frequently and his pulse felt constantly while he remains in the bath and, if the pulse becomes irregular or feeble, or if he shivers violently or becomes blue, he must be removed at once and put back in bed. If he stands the treatment well he may be allowed to remain in the water for about fifteen minutes. During this period the bed should be remade, a



waterproof sheet and warm blanket being placed over the bottom sheet and the pillow. Hot-water bottles should be filled and towels and blankets warmed. The patient is lifted out of the bath on to the blanket and dried quickly with the towels. The waterproof and damp blanket are removed and the patient is covered with a warm blanket. His temperature should be taken immediately, and a stimulant may be given if necessary. The temperature should again be taken and charted after about twenty minutes.

The application of cold water may be used as a tonic or a stimulant to the circulation for those whose condition is sufficiently robust for this form of treatment. It must never be given as a punishment.

The cold water may be applied by sponging, a douche or shower bath, or by immersion in a cold bath. Sponging is the mildest form of using cold water for its tonic effect. Douches and shower baths are sometimes prescribed in cases of stupor.

Cold baths should not be given to patients who are weak or have a poor circulation, and should last only from a few seconds to two minutes ; after leaving the bath, the patient should be vigorously dried with a coarse towel. The application of cold causes a transient contraction of the blood vessels of the skin, followed by their dilatation. Unless this reaction occurs and the patient experiences a glow, or feeling of warmth, the treatment is probably unsuitable for him.

### **Warm Baths.**

**Cleansing Bath.**—The method of washing a patient in bed by means of a blanket bath is described in Chapter IV.

Patients who are well enough to leave their beds may be bathed in the bathroom. The water should be warm and everything that may be needed, such as soap, towels, clean clothing, dressing gown, slippers, etc., must be placed in readiness. The patient should not be left alone in the bathroom, and the special rules for bathing mental patients must be carefully observed.

Before a newly admitted patient is given a bath, his temperature, pulse and respiration should be taken and the consent of the doctor obtained.

**Continuous or Prolonged Warm Bath.**—This is one of the most effective methods of treating states of excitement, restlessness and delirium, and of procuring sleep. It is also used in the treatment of suppurating wounds, extensive burns, and some forms of skin disease.

The treatment is given by means of a bath specially designed for the purpose and equipped with an apparatus by which the hot and cold water are automatically mixed before being run into the bath in order to obtain the required temperature, which is registered by a thermometer on the delivery pipe. The water enters the bath through inlets at the sides and the waste remains open so that a constant flow of water at a uniform temperature is maintained. The bath is also equipped with a canvas hammock which is suspended in it by means of straps attached to hooks on the outside. The temperature of the water should be maintained at about 98° F. It should be borne in mind that the automatic controls are sometimes inaccurate or out of order, and the temperature should be checked at frequent intervals by using an ordinary bath thermometer.

Before being put in the bath, the patient should be rubbed with oil or some other unguent to prevent irritation and shrivelling of the skin; a rubber bathing cap may be worn to keep the hair dry and prevent water getting into the ears. The patient is wrapped in a sheet and laid on the hammock in the bath, the body being completely immersed up to the neck; an air cushion is placed under his head. The top of the bath may be covered with a blanket. A cold compress is applied to the forehead and is renewed frequently. The patient should be made as comfortable as possible and given plenty of water to drink while in the bath. If the bath is prolonged for several hours, hot broth, cocoa, or other nourishment may be given at intervals. The room should be quiet and the light subdued, and talking should be avoided.

The patient may be kept in the bath for about twenty minutes on the first occasion, but, subsequently, the period may be prolonged up to an hour or longer or even for several days. When the bath is continued for long periods, the patient is taken out and dried twice a day and given an opportunity to have a motion and pass urine. While this is being done the bath is emptied, cleaned and refilled.

After the patient has remained in for the prescribed period, he should be taken out and dried, wrapped in a warm blanket, and carried to his bed.

A nurse should remain constantly in the bathroom, and the patient must be kept under close supervision while he is in the bath. His general condition should be observed and his pulse frequently felt, and measures must be taken to prevent accidents such as drowning, particularly with cases who are depressed and suicidal.

If a special apparatus is not available, a prolonged bath may be given in an ordinary bath. The temperature is maintained by letting out some of the water and replenishing with hot water at intervals.

### **Hot Baths.**

A hot bath is used in minor ailments to stimulate the action of the sweat glands and to assist in the elimination of toxins from the body. The temperature should be tested with a thermometer or with the tip of the nurse's elbow. The patient should not remain in the bath for longer than five or ten minutes, and should afterwards be put in a warm bed and given a hot drink; a hot-water bottle may be placed at his feet.

Hot-air baths and packs are also used to promote sweating.

Hot baths are also given for their sedative effect. They promote sleep, relieve pain and muscular spasm, and are also used in the treatment of retention of urine.



A bath at a temperature of about  $105^{\circ}$  F. may be ordered for the treatment of convulsions in children. A cold compress is applied to the child's head and he is kept immersed in the bath for about five minutes.

### **Medicated Baths.**

These are baths containing various drugs or substances in solution or suspension.

**Mustard Bath.**—This is given as a stimulant and to treat collapse, particularly in children. Mustard, in the proportion of about one ounce to every five gallons of water in the bath, is mixed with a little cold water into a paste which is added to the bath and thoroughly stirred into it. The temperature of the bath should be about  $100^{\circ}$  F.

**Sulphur Bath.**—This is used for the treatment of skin diseases and rheumatism. About four ounces of sulphurated potash are dissolved in hot water and the solution added to about thirty gallons of water, the quantity usually contained in an ordinary bath.

**Bran Bath.**—A bran bath may be given to allay itching. About four pounds of bran are boiled in a gallon of water and the strained infusion added to a bath of tepid water.

**Alkaline Bath.**—A hot bath containing about eight ounces of carbonate of soda to thirty gallons of water is used in the treatment of rheumatism.

Baths containing carbolic acid or other antiseptics are used to disinfect the skin after recovery from infectious diseases.

### **Local Baths.**

These are specially shaped for the prolonged immersion of the arm or leg. They are used for the treatment of inflammation and suppurating wounds. The bath is filled with hot antiseptic solution and the limb is immersed in it and covered with a piece of waterproof and blanket to retain the heat.

## Hot Air Bath.

A hot air bath is a method of applying heat to the body to cause sweating in cases of kidney disease. It is unsuitable for mental patients because of the danger of burning or setting fire to clothing.

The bath may be given to a patient in bed. One or two bed cradles, covered with a waterproof and blankets, are placed over the patient to form a tent, the blankets being well tucked in round the neck and under the mattress. A special form of kettle, heated by a spirit lamp or by other means, is placed near the foot of the bed. If a lamp is used, it must stand in a basin of water. The hot air from the kettle is conveyed under the cradle by a pipe which should be protected with a piece of wet blanket or an asbestos collar to prevent scorching at the place where it enters the tent. A thermometer should be hung inside the cradle so that the temperature may be checked at intervals. The usual temperature of the bath is from  $115^{\circ}$  to  $150^{\circ}$  F.

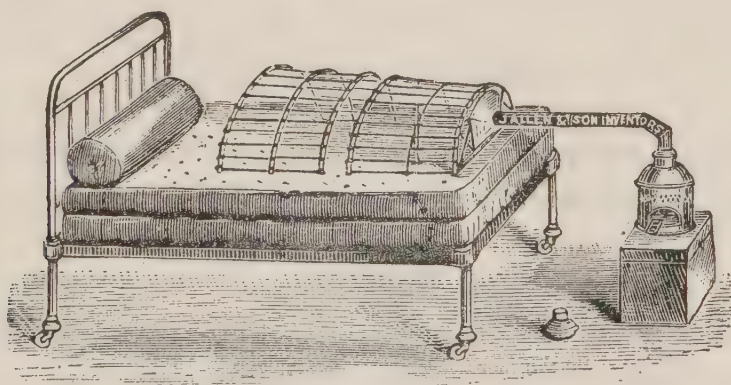


FIG. 48.—HOT AIR BATH.

Before the cradles are fixed in position, the patient is stripped, wrapped in a warm blanket, and a waterproof and blanket are laid under him. During the time he remains in the bath, usually from fifteen to thirty minutes, he must be constantly watched as he might become exhausted or faint; he should be given plenty of water to drink. After the period prescribed has elapsed, the lamp, kettle, cradles, etc., are removed, and the patient is left between blankets until sweating has ceased.

A hot-air bath may be given to a patient sitting on a chair and covered up to the neck with blankets which are arranged to form a canopy or tent in which a stove is placed.

A radiant heat apparatus may be used to give a hot-air bath. The apparatus may be in the form of an electric cabinet, or of a large curved shield like a bed cradle with several electric-light bulbs fixed on its under surface.

In Turkish baths, specially constructed rooms are filled with hot air.

### **Vapour Baths.**

A vapour bath may be given by means of an apparatus similar to that used for giving a hot-air bath, but the kettle is filled with water, and steam is generated and introduced round the patient instead of hot air.

The vapour may be medicated by the addition of sulphur or other substances to the water.

A vapour bath may also be given in a closed cabinet with an opening for the head to protrude, or with the patient sitting on a chair under a canopy of blankets.

A Russian bath is a form of vapour bath given by placing the patient in a room filled with steam.

### **Sponging.**

Sponging with tepid or cold water is frequently used to reduce the temperature in fevers and to procure sleep. This method is not so drastic as the cold bath and there is less danger of collapse. A basin is filled with water which should be at a temperature of 70° to 85° F. at first. While the patient is being sponged, it may be gradually reduced to 50° or 60° F. by adding iced water from another basin from time to time. A long waterproof sheet and a blanket are placed under the patient, the bedclothing is removed, the patient is stripped, and rolled up towels or draw-sheets are laid against him on each side from the armpits to the ankles. He is covered with a blanket and a hot-water bottle may be placed against his feet. Sponges or cloths soaked in iced water are put on his



head, under the nape of his neck, and in the armpits. The face and neck are first wiped with a sponge or a piece of wool lightly wrung out in the cold water, and then one of the upper limbs is exposed and sponged with long sweeping strokes from the shoulder to the hand. The other arm is then sponged, and the hands are held over the basin and doused with the cold water. The sponges are cooled by dipping them frequently in the water which is kept cold by replenishing it with ice or iced water from time to time ; or they are replaced by other sponges which have been immersed in the water. Each part, after having been sponged, is covered with the blanket and is left to dry by evaporation in order to increase the cooling effect. After the upper limbs have been dealt with, the chest and abdomen are sponged. The lower limbs are then exposed and their front surfaces sponged from groin to ankle ; they are then lifted and held up in turn while their posterior surfaces are done. The feet may then be immersed in the basin, doused, and wiped to remove the water dripping from them. The rolled up towels at the patient's sides are removed, he is gently turned over on to his side, and his back, shoulders and hips are sponged with long sweeping strokes and then dried, rubbed with spirit lotion and powdered. The waterproof sheet and blanket are then rolled up against the patient's back and removed in the way described for changing a bottom sheet ; the patient is then dried, put in a warm nightgown and covered with a sheet or blanket. His temperature should be taken immediately, and, if it has dropped  $5^{\circ}$  or more, additional warmth and a stimulant may be needed ; the temperature should again be taken half an hour later and charted. A drop of  $3^{\circ}$  or  $4^{\circ}$  F. may be regarded as satisfactory. As a rule the sponging should be completed in about twenty minutes, but, if the pulse becomes weak or the patient shivers badly or becomes cyanosed, the treatment should be discontinued and a stimulant administered.

### **Packs.**

Packing is a form of treatment in which the patient's body is enveloped in sheets or blankets which may be either hot or cold, dry or wet.

Packs should be given only as a method of treatment and by the doctor's orders. As the patient's movements are restricted by the sheet wrapped round his body, the use of a pack, in the case of mental patients, constitutes a form of mechanical restraint, and must be recorded as such.

**Cold Wet Pack.**—A cold wet pack is used to reduce the temperature in fever, to treat heatstroke or sunstroke, and to calm excitement or to induce sleep.

A waterproof sheet covered with a large blanket is laid on the bed under the patient, who is stripped and left covered only with a blanket. A cold compress is applied to his head and hot-water bottles are placed at his feet. Two sheets are wrung out in water at a temperature of about 60° F.; one of them is folded and rolled underneath the patient, and the other is placed over him under the blanket. The wet sheets should be in contact with every part of the surface of the body; the top one should be arranged closely round the neck, and folds should be tucked in between the legs. When the top sheet has become warm, it should be replaced by another freshly wrung out in the cold water, or it may be cooled by rubbing it with a piece of ice or sprinkling it with cold water from a watering can.

The patient must be carefully observed while in the pack; his pulse should be felt and his temperature taken frequently, and the treatment should be stopped if he shows signs of collapse.

As a general rule he may remain in the pack for fifteen to twenty minutes, but the treatment may be prolonged if the pack is being given as a sedative and the sheet is not frequently cooled.

After the wet sheets have been removed, the patient is dried, his gown is put on, and he is warmly covered. His temperature should be taken immediately after removal from the pack and, again, twenty minutes later, when it should be charted.

Four or five large towels may be used instead of the top sheet; they are more easily changed than a sheet.

**Hot Wet Pack.**—A hot wet pack is used to cause sweating in cases of kidney disease, and also as a method of calming excitement and restlessness, particularly in depressed and agitated cases and those who are too resistive or violent to be treated in a prolonged warm bath.

Before the pack is given, the patient should pass urine and his bowel should be emptied if possible.

A waterproof sheet between two blankets is laid under the patient, who is stripped and covered with a blanket; a cold compress is applied to his head and a hot-water bottle placed at his feet. An enamel bath or a pail is placed at the bedside and filled with hot water. Two sheets or thin blankets are soaked in the hot water which should be at a temperature of about 115° F. One of the blankets or sheets is quickly wrung out, shaken to free it from steam, and rolled under the patient; the other, after having been quickly wrung out and shaken, is laid over him and tucked into the armpits and between the legs so that it is in close contact with the whole of the body and the skin surfaces are not touching one another.

A pack may also be given by means of one large sheet. This is laid under the patient with about a third more of it on one side than on the other; the patient's arms are raised above his head and the narrower part of the sheet folded smoothly over his body and between his legs; the arms are then lowered and the other part of the sheet closely folded over the body and limbs.

After having been packed in the hot sheets, the patient is covered with a waterproof and with two or three blankets which are well tucked in round the bed, and hot-water bottles are placed round him between the blankets.

The patient may remain in the pack for thirty minutes or, sometimes, an hour, and during this period he should be given plenty of water or warm drinks. He must be constantly watched and his pulse felt frequently on account of the danger of his becoming overheated or exhausted. After the pack has been applied for the period prescribed, the wet sheets are



removed and the patient left between dry, warm blankets until he has ceased to sweat. He is then sponged with hot water, dried with warm towels, and put to bed in a warm nightgown between blankets.

**Hot Dry Pack.**—This is prescribed to cause sweating and the elimination of poisons in cases of dropsy and kidney disease. Pilocarpine, a drug which rapidly produces sweating, is often given hypodermically at the same time.

A waterproof is laid under the patient, who is stripped and wrapped tightly in three or four hot blankets. Hot-water bottles are placed around the patient, who is then covered with more blankets. Hot drinks are given during the application of the pack, which may be continued for an hour. The patient should be carefully watched as collapse may occur. After sweating has ceased, he should be dried with hot towels and warmly wrapped up in bed.

## CHAPTER XIX.

### NURSING IN CASES OF DISEASE OF THE EYE, EAR, NOSE AND THROAT.

#### Diseases of the Eye.

The eye is a delicate and sensitive organ, and the various methods of treating it must be carried out with care and gentleness. Some eye diseases, such as purulent ophthalmia, are extremely contagious and, in these cases, precautions must be taken to prevent infection of the patient's healthy eye and the eyes of the nurse attending to the patient.

**Eye Drops.**—These consist of drugs in solution in strengths suitable for application to the eye, e.g., antiseptics, such as boracic acid or silver nitrate; substances which cause the pupil to dilate or contract, such as atropine and eserine; and others which relieve pain or render the eye insensitive, such as cocaine.



FIG. 49.—EYE DROPPER.

Eye drops are administered by means of a glass drop bottle, or by a glass tube with a pointed end and a rubber teat attached to the other end. The patient should sit in a chair with his head bent backwards and eyes looking upwards; the dropper is filled with the lotion, and the nurse, standing behind the patient, pulls down his lower lid with the finger of her left hand, holds the dropper in her right with the point close to the eye, and allows two or three drops of the liquid to fall on the everted lower lid. The patient should then close his eye and move the eyeball about to spread the lotion over its surface.

**Lamellae** are thin discs of gelatine which are placed on the everted lower lid with a small camel hair brush; the patient then closes his eye, and the lamella melts and sets free the drug which it contains.

**Irrigation of the Eye.**—The surface of the eyeball may be washed with lotions by means of an irrigating flask, called an **undine**, or by gently squeezing a sterilised wool swab which has been soaked in the solution and letting the lotion trickle on to the surface of the eye. The lotion should be warmed. The patient sits with his head bent back and the eye looking upwards and outwards; the nurse behind him holds the eye open with the fingers of her left hand and lets the lotion fall gently on the inner corner of the eye. A kidney-shaped basin is held close against the cheek to receive the lotion after it has flowed over the surface of the eye. Lotions



FIG. 50.—UNDINE.

may also be applied by means of an **eye bath** which is partly filled with the lotion and applied over the orbit and opened eye. Discharges may be removed by wiping the lids of the closed eye with swabs soaked in antiseptic lotion, the wiping being done from within outwards.

**Ointments** with which drugs are incorporated, e.g., the so-called “golden ointment” containing yellow oxide of mercury, may be prescribed for the treatment of eye diseases. They are applied to the inner surface of the everted lower lid by means of a camel’s hair brush, a small glass rod, or a probe. The patient is told to close his eyes after the ointment has been applied.

In cases of blepharitis, or inflammation of the eyelids, the ointment is smeared on the edges of the lids.

**Hot or Cold Compresses** are sometimes ordered in cases of eye disease and are applied over the orbit.



**Blisters** over the forehead or temple are used to relieve pain or congestion of the eye.

Many cases of eye disease are best treated in a subdued light or in a darkened room.



FIG. 51.—EYE BATH.

### **Diseases of the Ear.**

The special methods of treatment which the nurse may be called on to carry out are syringing of the ear, the instillation of drops, and the introduction of powders.

**Syringing or Douching the Ear.**—This treatment may be ordered for the removal from the ear of wax, discharges, or foreign bodies. A towel should be arranged over the patient's neck and shoulders to protect the clothing, and he should be given a kidney-shaped basin to hold closely under his ear to catch the returning liquid. An ear syringe, usually a metal one holding about four ounces, is filled with water, or the lotion prescribed, at a temperature of 100° F., and the air is expelled from the syringe. The nurse should stand at the patient's side and, with the fingers of her left hand, pull the top of the ear slightly upwards and backwards. The syringe is held in the right hand and the point of the nozzle is placed at the opening of the ear. It should be directed slightly forwards and upwards so that the stream of liquid is not driven directly on the ear drum, but washes over it and returns along the floor of the passage. The liquid must be injected slowly and without the use of undue force. The opening from the ear must not be blocked by the nozzle, the point of which may be held about half an inch from the opening to avoid the risk of obstructing the return of the liquid. When the syringe is emptied it may be refilled and the syringing repeated as often as necessary.

If the patient complains of giddiness or faintness, the operation should be stopped at once. When there is a perforation of the ear drum the lotion may pass into the throat or mouth and the patient may notice the taste and mention it. This, or the occurrence of bleeding or pain during the operation, should be reported to the doctor.

In order to assist the removal of wax, a few drops of a solution of sodium bicarbonate or peroxide of hydrogen may be instilled into the ear a few minutes before the syringing is done.

After the syringing has been completed the ear passage should be gently dried with pieces of absorbent wool.

The syringe should be disinfected and its nozzle boiled after use. If the case is a septic one and there is a discharge from the ear, it is advisable to use a glass syringe which can be completely sterilised by boiling.

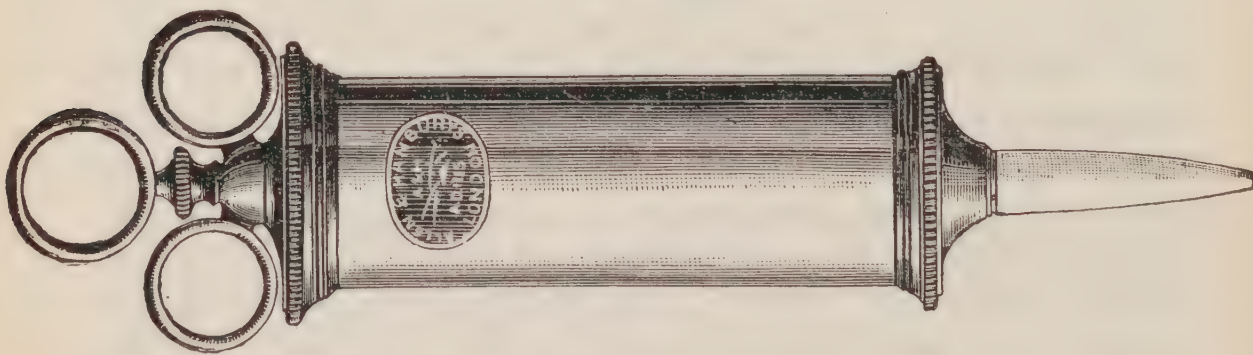


FIG. 52.—EAR SYRINGE.

**Ear Drops.**—The drops should be slightly warmed before they are instilled. The patient's head should be bent to one side and the drops allowed to fall gently into the opening of the auditory canal from a dropper or spoon held close to the ear. The patient should be told to lie on his other side for some time after the drops have been instilled, and a small plug of wool may be placed in the opening.

In some cases the ear should be syringed and dried before the drops are administered.

**Insufflation of the Ear.**—Powders, such as boracic acid or iodoform, may be blown into the ear passage by means of an insufflator, or by placing them in a glass tube attached to a short length of rubber tubing and blowing through the tubing.

Drugs can also be applied to the ear through the medium of gelatine cones which are inserted into the ear and melt at body temperature, setting free the drug which they contain.

### Diseases of the Nose.

The cavity of the nose may be douched or irrigated with lotions by means of a glass douche designed for the purpose, or by a syringe.



FIG. 53.—GLASS NASAL DOUCHE.

When a glass **nasal douche** is used, the douche is filled with the warmed lotion, the finger placed on the inlet at the top, and the nozzle inserted into one nostril. The patient should breathe quickly through his mouth, which should be kept open. When the finger is removed from the inlet, the lotion should flow into the one nostril and out at the other.

If it is desired to irrigate the nose continuously with a large quantity of lotion, a simple method is to use a small douche-can to which is attached a length of tubing connected with a rubber catheter. The can containing the lotion is placed at a slightly higher level than the patient's head. The patient should sit forward over a basin and breathe through his open mouth. The tubing is freed from air by allowing some



lotion to run through it, and the catheter inserted into one nostril. The fluid should pass in through one nostril and out by the other. The douche-can should not be placed at too high a level in irrigating the nose, as infection may be conveyed to the ear or other parts if the liquid is forced into the Eustachian tubes or the openings of sinuses.

A siphonage apparatus may be used instead of a douche-can.

Medicinal substances may also be applied to the interior of the nose by means of a spray or atomiser.

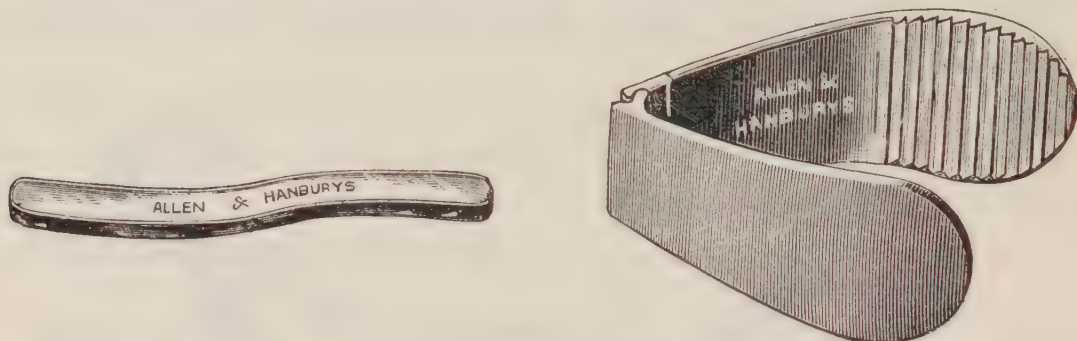


FIG. 54.—TONGUE DEPRESSORS.

### Diseases of the Throat.

**Gargles.**—These consist of solutions of substances having an antiseptic, astringent, or sedative action. The patient should take a mouthful of the liquid, throw his head back, open his mouth and blow through the liquid without swallowing it, making a gurgling sound; the solution should then be expelled and the process repeated several times.

**Painting the Throat.**—Antiseptic or astringent drugs may be applied to the throat by means of a throat brush. The patient's tongue should be held down with a tongue depressor or spatula and the solution painted over the tonsils or pharynx by means of the brush.

Medicaments may be brought into contact with the mucous membrane of the throat by inhaling vapour or gas containing the drug.

Medicines may also be applied to the throat by spraying solutions of them through the mouth. The patient should be told to inhale deeply and say "Ah" when the bellows of the spray are compressed.

**Tracheotomy.**—This operation is performed when there is danger of asphyxia from obstruction of the upper air passages. The obstruction may be caused by the growth of diphtheritic membrane in the larynx, by a foreign body, such as a lump of food, in the air passages, or by oedema or a tumour of the larynx. If the condition is acute it may be necessary to open the trachea below the obstruction in order to enable

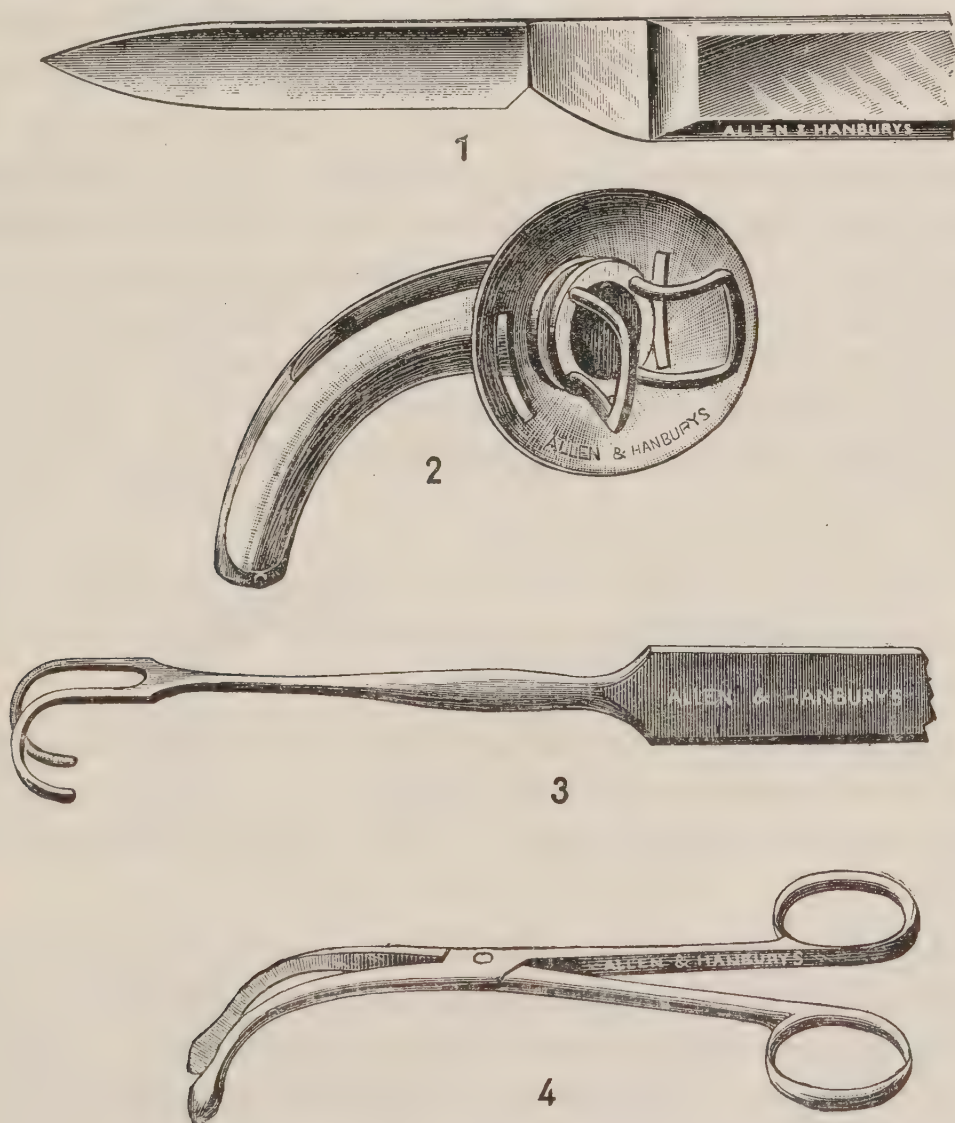


FIG. 55.—TRACHEOTOMY INSTRUMENTS.

1, Scalpel ; 2, Tracheotomy Tube ; 3, Retractor ; 4, Tracheal Dilating Forceps.

air to enter the lower air passages directly. The operation is called tracheotomy and, as the conditions necessitating it are often of extreme urgency, it may have to be performed at short notice.

If there is time, the following instruments, etc., should be sterilised and placed in readiness: Scalpel, tracheotomy tubes with tapes, trachea dilator, scissors, dissecting and artery forceps, retractors, needles, sutures, dressings and lotions. If the condition of the patient is very urgent with signs of impending asphyxia and there is no time to prepare all the above instruments, the operation can be done with a scalpel, but a tracheotomy tube and dilator should also be obtained as soon as possible.

The tracheotomy tube, which is inserted through the incision made into the trachea, provides a passage for the air to and from the lungs, and prevents closure of the opening. The instrument is usually made of metal and consists of two curved tubes, an inner and an outer. It is kept in position by tapes which pass through slits in flanges at the sides of the outer tube and are fastened round the neck. The inner tube is longer than the outer and is removable so that it can be taken out at intervals and cleaned. A dressing with an opening cut for the tube should be placed over the wound under the flange and a double layer of moist gauze is applied over the opening to the tube to act as a filter and to catch any discharge that may be coughed up.

The inner tube must be taken out and cleaned every few hours or whenever it becomes blocked. The skin round the wound must be kept clean and the dressing changed frequently.

If the complete tube comes out accidentally, the nurse must try to keep the wound open with a trachea dilator or a pair of forceps until assistance can be obtained. A dilator, forceps, scissors, bicarbonate of soda lotion to remove mucus from the tube, antiseptic lotion and a supply of dressings should be prepared and should be immediately available in every case after tracheotomy has been performed.



## CHAPTER XX.

### GYNAECOLOGICAL AND OBSTETRICAL NURSING.

**Gynaecology** is the term applied to the branch of medicine which deals with diseases peculiar to women.

**Obstetrics**, or midwifery, deals with the management of labour and the care of the patient during the periods of pregnancy and the puerperium.

### GYNAECOLOGICAL NURSING.

The nurse may be required to prepare the patient for examination, to carry out instructions for treatment, or to assist at operations.

#### Preparations for Examination.

A patient should be specially prepared for gynaecological examination. She should be washed, special attention being given to the region of the vulva and anus, and clean clothing should be worn. An aperient should be given the evening before the examination if possible and an enema may be administered the following morning if an aperient has not been given or has not acted; the patient should pass urine before being examined or the urine should be withdrawn by catheter if necessary.

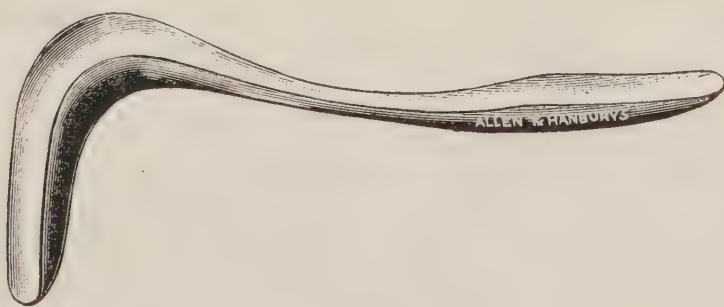


FIG. 56.—VAGINAL SPECULUM.

A vaginal speculum, i.e., an instrument for the examination of the cavity of the vagina, a pair of volsellum forceps, rubber gloves or a petticoat finger stall and any other articles required should be sterilised and placed in readiness. Sterilised vaseline or other lubricant, swabs, absorbent wool pads, warm anti-septic lotion and basins should also be prepared.

The patient should be put to bed, the nightgown pulled up, and the bed clothing turned down to below the level of the knees, the lower part of the body and the thighs from above the pubes being covered only with the sheet.

The position in which the patient is placed depends on the nature of the examination to be made. If the breasts and abdomen are to be examined or if a bimanual examination of the uterus is to be made, she should lie on her back, i.e., in the **dorsal position**, and the thighs should be flexed and the knees separated. For a vaginal examination she may lie on her left side, in the **left lateral position**, with the buttocks projecting over the edge of the bed and the knees drawn up as far as possible. If a speculum is to be used, the patient should be placed in a semi-prone position on her left side with her face and breast resting on the pillow, her left arm hanging over the edge of the bed behind her, and her knees drawn up, the right being in front and slightly higher than the left.

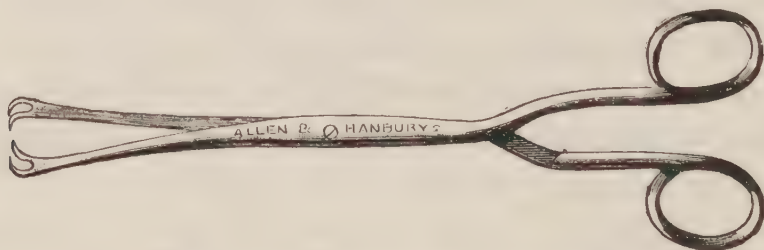


FIG. 57.—VOLSELLUM FORCEPS.

For operations under an anaesthetic, the patient may be placed in what is called the **lithotomy position**, in which she lies on her back with the buttocks projecting over the edge of the table, the thighs being flexed on the abdomen and the knees bent, the limbs being maintained in this position by strapping the feet to uprights at the end of the table, or by means of a special apparatus called a Clover's Crutch.

While the patient is being examined by the doctor, the nurse should assist by keeping the knees separated and preventing the clothing becoming disarranged and getting in the way. Unnecessary exposure of the patient should be avoided. Two nurses may be needed ; one, who should have prepared

herself for this duty by washing and disinfecting her hands, to look after the instruments, etc., and hand them to the doctor, and the other to keep the patient and bedclothing in position. The speculum should be warmed in the antiseptic lotion and lubricated on its outer surface before it is used.

### **Observation and Nursing.**

In the observation and nursing of gynaecological cases it is essential that the utmost cleanliness should be maintained. The parts should be washed with lotion and the pads frequently changed. The action of the bowels and bladder should be specially observed, and notes should be kept with regard to the frequency of micturition, the character and quantity of the urine passed, and the nature of any vaginal discharge.

**Vaginal Douche.**—A vaginal douche may be given to clean the vaginal cavity, to treat inflammatory conditions, or to check haemorrhage. An irrigator or douche-can is used, connected with a long piece of rubber tubing to the end of which a special nozzle, fitted with a stop-cock, is attached. The douche-can should be hung on the wall or held about five feet higher than the level of the bed. The douche usually consists of about three pints of hot water or of various antiseptic lotions such as one drachm of tincture of iodine or of lysol to a pint of water, a 1 in 4,000 solution of biniodide of mercury, or a solution of potassium permanganate or zinc sulphate. The temperature of an ordinary douche should be about 105° F. In inflammatory conditions, it may be 115° F. and, when given to check haemorrhage, it is usually given at a temperature of about 120° F., the skin of the perineum being smeared with vaseline to prevent scalding. Swabs soaked in antiseptic lotion, dry sterile wool, and a basin to receive the used swabs will be needed. The nozzle of the apparatus should be sterilised. The bed is covered with a waterproof sheet, the upper bedclothing folded back as far as the knees and only the sheet used to cover the patient, who should lie on her back with the thighs separated and the knees bent, her back being supported by a pillow. A warmed douche bath or bed pan



is placed in position under her. The nurse should scrub and disinfect her hands and then separate the labia and wash the vaginal orifice with swabs soaked in antiseptic lotion. Some of the lotion from the douche-can is then run through the tubing in order to warm it and expel the air; the nozzle is then inserted about three inches into the vagina in a backward and upward direction, and the lotion is allowed to flow into the vagina and discharge into the bedpan until the can is almost empty. The nozzle is then withdrawn, the parts are wiped with swabs, dried with wool, and a pad of dry wool applied and secured in position with a T bandage. A Higginson's syringe to which a special nozzle is attached may be used to give a vaginal douche if an irrigator is not available.

A vaginal douche may also be given with the patient lying on her left side on the edge of the bed; the clothing is folded out of the way, and a waterproof sheet is arranged under the patient so as to form a gutter, over the edge of the bed, along which the returning liquid flows and discharges into a pail placed on the floor.

**Intra-uterine Douche.**—A special form of nozzle is used for this form of douche, which is usually administered by the doctor.

**Pessaries.**—These are appliances which are inserted into the vagina in order to support a displaced or a prolapsed uterus. There are various forms of pessaries as regards shape and different sizes; they may be made of rubber, vulcanite or metal. A patient who wears a pessary should have a vaginal douche every day, and the pessary should be removed every three months, or more often if necessary, and thoroughly cleaned before it is replaced.

**Tampons.**—These are wool plugs, about the size of a hen's egg, round the middle of which a piece of tape or thread is tied. They are inserted into the vagina to treat inflammatory conditions and absorb discharges and to check hæmorrhage, the ends of the piece of tape being left outside to facilitate removal. Tampons should be sterilised before use, and they may be impregnated with various antiseptic substances.

**Vaginal Suppositories.**—These are solid preparations usually composed of cacao butter impregnated with antiseptics or other drugs. They are lubricated and inserted into the vagina, and a pad or diaper is afterwards applied to absorb any discharge.

## OBSTETRICAL NURSING.

### Pregnancy.

Pregnancy is accompanied by changes throughout the whole of the body as well as in the uterus and genital organs, but it should be regarded as a natural condition and, if no complications occur, a pregnant woman should lead an ordinary healthy life.

The chief **signs of pregnancy** are :—

- (1) Cessation of menstruation.
- (2) Swelling of the breasts and pigmentation around the nipples : These changes may be observed from about the second month of pregnancy ; there may also be a discharge of clear fluid from the nipples.
- (3) Morning vomiting : This usually begins at the end of the second month and continues until the end of the fourth ; it may become excessive and require special treatment.
- (4) Enlargement of the abdomen : This may not be apparent until the third month ; it gradually increases afterwards.
- (5) Quickening : This is the term used to denote the fluttering sensation experienced by the woman as a result of movements of the foetus in the uterus ; it is usually first noticed about the fifth month.
- (6) Foetal heart sounds : The sound produced by the beating of the heart of the foetus may be heard over the lower part of the abdomen from about the middle of the fifth month.

The presence of foetal heart sounds is the only one of the above signs which is an unequivocal proof of pregnancy. The others mentioned may occur as a result of other conditions.

**Disorders of Pregnancy.**

**Abortion or Miscarriage.**—These terms are applied to the premature expulsion of the fertilised ovum from the uterus before the twenty-eighth week, i.e., before the foetus is capable of independent life. Premature birth is the term used for the expulsion of the foetus after the seventh month but before the completion of the full term of pregnancy. Miscarriage and premature birth may be due to injury, disease, or other causes.

The chief indications of miscarriage are haemorrhage from the vagina and pains ; the occurrence of such signs in a pregnant woman should be immediately reported to the doctor, and anything expelled from the vagina should be kept for his inspection.

**Eclampsia.**—This is a condition associated with disease of the kidneys in which convulsive seizures resembling epileptic fits may occur during pregnancy or labour. The chief symptoms, in addition to the convulsions, are headache, impairment of vision and general oedema. The urine may be diminished in quantity and contain albumin and sometimes blood. This condition is a grave one, and the occurrence of any of the above symptoms should be reported immediately.

Digestive disturbances and constipation are common in pregnancy, and varicose veins, piles and swelling of the feet are liable to occur in the later months as a result of the obstruction to the circulation caused by the enlargement of the uterus.

**Extra-uterine Pregnancy, or Ectopic Gestation.**—This term is applied to the condition in which the fertilised ovum or foetus develops outside the cavity of the uterus, often in one of the Fallopian tubes. The growth of the foetus may cause rupture of the tube with symptoms of serious internal haemorrhage such as severe abdominal pain, shock and collapse.



## **Management of Pregnancy.**

The diet should be simple and nourishing and the expectant mother should abstain from alcohol. Moderate exercise should be taken and the skin kept in good condition by regular warm baths. The breasts should be washed frequently and vaseline or lanoline may be applied to the nipples. The urine must be tested every month in the early stages and more frequently during the last three months of pregnancy in order that kidney disease, one of the more frequent complications of pregnancy, may be detected and treated at its onset. The patient should be examined frequently, especially with regard to the presence of swelling of the feet and any vaginal discharge. The occurrence of haemorrhage from the vagina should be immediately reported.

## **Parturition or Labour.**

The onset of labour is indicated by pains in the back and abdomen, due to the contraction of the uterus, and by the appearance of a vaginal discharge, commonly called "the show", consisting of mucus slightly stained with blood. The pains recur at intervals, become gradually more frequent, more regular and more severe, and continue until labour has been completed. So-called "false pains" often occur during the last few weeks of pregnancy, but these are usually irregular and colicky in nature and they do not continue. They may be relieved by the administration of an aperient.

**Duration and Stages of Labour.**—The average duration of labour varies from eighteen to twenty-four hours in the case of a primipara, i.e., a woman who is giving birth to her first child, and from three to twelve hours in a multipara, a woman who has previously had a child. Labour is divided into three stages, the first lasting from the onset until the mouth of the uterus, the os uteri, is completely dilated, the second from the dilatation of the os to the expulsion of the foetus, and the third from the birth of the infant until the placenta has been expelled.

**Management of Labour.**

The nurse must inform the doctor or matron as soon as she notices signs of the onset of labour. The lower bowel should be emptied by the administration of a soap and water enema, and the patient should pass urine or the urine may be withdrawn by catheter if necessary. A warm bath may be given if there is time and, in any case, the vulva, anus and buttocks should be washed with soap and water and swabbed with an antiseptic lotion, and the pubic hair clipped short or shaved. The patient should wear a nightgown and woollen stockings. The room and bed must be prepared and a waterproof sheet placed over the mattress. A plank or piece of board may be placed across the foot end of the bed and a towel or piece of sheeting tied to the lower rail to give support to the patient while she is straining ; during the pains she can hold the other end of the towel while she presses her feet against the board.

The following instruments, etc., should be prepared and placed on a table near the bed. The instruments and articles must be sterilised.

Warm antiseptic lotion.

Swabs.

Basins for lotions, swabs, etc.

An ample supply of hot water.

Douche-can with tubing and nozzle, or a Higginson's syringe.

Rubber catheter.

Rubber gloves.

Hypodermic syringe and hypodermic tablets.

Scissors.

Strong linen thread or tape.

Steriliser.

During the early part of the first stage, the patient should be encouraged to walk about the room in a dressing gown, with occasional rests on the bed during the pains, and she may be given liquid nourishment such as milk or weak tea at intervals. When the pains become more regular and



severe, she should be put to bed, and she should lie on her left side with the hips at the side of the bed and the knees drawn up.

A pillow may be placed between the knees to keep the thighs apart, and the feet should rest against the board at the foot of the bed. The nurse must wash and disinfect her hands before she touches the perineum or the genital organs. The beginning of the second stage is sometimes indicated by the gush of a quantity of watery liquid from the vagina. With every pain the perineum may be seen to bulge, and the vaginal orifice dilates. When the head appears, the nurse should support the perineum with one hand and regulate the advance of the head with the other in order to prevent too rapid stretching of the perineum. The patient may also be told to cry out or open her mouth when the head presses on the perineum and the pain is acute, and not to bear down between the pains. After the head has been expelled, the nurse should see if the neck is encircled by the umbilical cord and, if so, the loop of cord must be pulled down and brought over the head. The infant's mouth, nose and eyes should be wiped with a swab soaked in sterile water or boracic lotion to remove any adherent mucus. The head is supported with one hand and the nurse should wait until succeeding pains have expelled the shoulders and the rest of the body, which is received by the other hand. The infant is put on the bed with its face turned away from any discharge from the mother's vagina; after the cord has ceased to pulsate it should be ligatured in two places with the sterilised linen thread, pieces of which may be twisted together, or with a piece of tape. One ligature is tied about two inches from the infant's abdomen and the other about one inch further and the cord is cut between the two ligatures. In view of the danger of infection of the conjunctiva, in cases where it is suspected that the mother may have gonorrhoea, one or two drops of a 2-per cent. solution of silver nitrate may be instilled into each of the infant's eyes. The infant is then wrapped in a warm shawl or piece of blanket and left until arrangements have been made to bath it. The mother is told to lie on her back



and a basin is placed between her thighs in readiness to receive the **placenta**, or afterbirth. After an interval the pains recur and the placenta is expelled and is followed by the attached membranes. When the placenta appears it should be drawn gently downwards and backwards and the membranes twisted into a cord by turning the placenta round in order to prevent their being torn. The placenta should be placed in a basin of clean water and kept for the doctor's inspection. After the expulsion of the placenta, the nurse should keep her hand on the abdomen for a while in order to feel if the uterus remains hard and contracted. Relaxation and softening of the uterus may be an indication of impending haemorrhage.

The perineum should be examined for tears and, if none are seen, the parts are washed and swabbed with antiseptic lotion and a sterile pad is placed over the vulva and secured by a T bandage. The soiled linen and bedding are changed, and an abdominal binder may be applied over the hips and lower part of the abdomen. The infant should be bathed with soap and water at a temperature of 100° F., powdered and dressed. The umbilicus is covered with a mild antiseptic dressing or a dusting powder of boracic acid, zinc oxide and starch, and a binder is applied and worn until the cord has separated.

The nurse should remain with the patient for an hour after the end of labour.

### **Complications of Labour.**

Labour may be prolonged and difficult and birth delayed or obstructed on account of abnormalities in the position or attitude of the foetus, deformities or contraction of the mother's pelvis, failure of the uterus to contract normally or because of a general state of ill-health of the mother.

**Post-partum Haemorrhage.**—This is bleeding from the uterus occurring during the third stage of labour or soon afterwards. It is often profuse and may be fatal. The nurse should immediately inform the doctor of any excessive discharge of blood from the vagina after labour and she may try

to stimulate the uterus to contract by kneading it with her hand through the abdominal wall until the arrival of the doctor. Hot water and the apparatus for giving a douche should be prepared and a hypodermic syringe with ergotin or pituitrin, which are used to treat the condition, should be obtained and placed in readiness.

**Perineal Tears.**—The perineum may be lacerated during childbirth, particularly if the head is allowed to advance too rapidly. It may be necessary to stitch the edges of the wound together and sutures, curved needles, a needle holder, forceps and dressings will be required for the operation.

### **Puerperium.**

The puerperium, or lying-in period, is the period during which the patient is recovering from childbirth and the uterus resuming its normal size. After labour is over, the patient may be given a warm drink of milk or beef tea and allowed to sleep. A watch must be kept for signs of haemorrhage. The diet during the puerperium should be nourishing and easily digestible and should consist chiefly of milk and carbohydrate foods for the first three days after which a gradual return to normal diet may be made. An aperient may be given if necessary on the evening of the second day after delivery, and the patient should pass urine within eight hours after the end of labour. If no urine has been passed before eighteen hours have elapsed, a catheter must be passed with careful antiseptic precautions. The **lochia** is the term applied to the discharge which comes from the vagina after delivery. It is red in colour during the first three days and then becomes gradually paler and usually ceases after two or three weeks.

It is most important that strict cleanliness should be maintained during the lying-in period. Sterile wool or gauze pads are applied over the vulva to absorb the lochial discharge, and they should be renewed whenever they become soiled and after the patient has defaecated or passed urine. When they are changed, the vulva should be wiped with swabs soaked in antiseptic lotion; the wiping should be done from above downwards to avoid contamination from the anal



region, and each swab should be used only once. During the first three days after labour, the mother may complain of recurrent abdominal pain, resembling weak labour pains; these are sometimes due to a piece of retained placenta or blood clot which stimulates the uterus to contract in order to expel it. The pains may be relieved by hot fomentations to the abdomen, and the doctor should be informed if they are severe.

The nurse must carefully observe the patient during the puerperium for signs of any of the complications which are liable to occur during this period, particularly haemorrhage and septic infection.

The temperature, pulse and respiration must be taken and recorded for two weeks after delivery, and longer if they are not normal. Notes should be kept of the quantity, colour, odour and nature of the lochia, the action of the bowels and bladder, the results of examination of the urine, the condition of the breasts, and any abnormal symptoms which may be noticed.

Before and after the infant sucks, the breasts should be wiped with swabs soaked in warm sterile water or boracic lotion and dried. The nipples should be examined for cracks or fissures; if these appear, the nurse should take precautions to prevent them becoming infected, and glycerine of borax or lanoline should be applied. The patient may usually be allowed to sit up for meals forty-eight hours after delivery and to get up about the fourteenth day.

### **Complications of the Puerperium.**

**Septic infection, or puerperal fever,** is a grave sequel of labour, and may be the result of carelessness in carrying out the procedure designed to prevent bacterial contamination. The chief symptoms of the condition are fever and rigors accompanied by prostration and, sometimes, delirium.

**Eclampsia,** previously mentioned as one of the complications of pregnancy, may also develop during or after labour.



**Phlegmasia alba dolens**, or "white leg", is a sequel of labour due to obstruction of the circulation of the lower limb, and may be caused by the formation of a clot in a vein or by inflammation of the lymphatic vessels. The limb becomes swollen, white, painful and tender, and there may be fever and rigors. The condition is a dangerous one, and it is important that the patient should be kept absolutely quiet. The limb should be wrapped in wool and supported on a pillow.

**Mental disorder** in various forms may develop during pregnancy or after labour. It may be caused by toxins produced in the body during pregnancy, the strain associated with pregnancy and labour, or by septic infection and exhaustion. States of confusion, with restlessness and hallucinations, are common.

### Care and Feeding of Infant.

If the mother is mentally disordered, it is usually inadvisable and it may be dangerous to the infant to allow the mother to suckle it. Under these circumstances it is necessary to resort to artificial feeding.

The simplest substitute for the natural food is cow's milk, suitably modified by dilution with water and the addition of cream and sugar. The milk should be sterilised by boiling or pasteurised. It is important that strict cleanliness should be observed in preparing the infant's food, and the feeding bottles and teat should be scalded before and after use and sterilised by boiling, every day. The infant must be fed regularly. For the first week one to one and a half ounces should be given every two hours during the day and twice during the night; afterwards larger quantities are given with longer intervals between feeds.

The infant usually loses weight during the first three days, but the loss is regained in the second week.

The **umbilical cord** should be dressed every day. It must be kept dry and may be powdered with a mixture of boracic acid, zinc oxide and starch. Haemorrhage from the umbilicus may occur and is usually due to the ligature having been too

loose, though the accident may also result from the ligature having been tied too tightly and cutting through the cord. Haemorrhage from the cord should be reported to the doctor, as serious complications may follow, particularly if the wound is septic.

**Ophthalmia neonatorum** is a severe type of purulent conjunctivitis which may develop a few days after birth. It is due to infection with organisms contained in the mother's vagina, most frequently the gonococcus. The condition is one of the most common causes of blindness, and the infant's eyes should be inspected for some days after labour in order that any signs of inflammation may be noticed.

## CHAPTER XXI.

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### **SIGNS OF IMPENDING DEATH : CARE OF THE DYING AND THE DEAD.**

#### **Signs of Impending Death.**

The approach of a fatal termination to an illness is indicated by various general and special signs which become progressively more pronounced. The patient becomes gradually weaker and his appearance changes. As a rule, the eyes are dull and sunken, the nose is pinched, and the face assumes a bluish-grey, dusky or mottled colour. The skin becomes cold and clammy, and sweat collects on the forehead. The extremities become gradually colder. Towards the end, muscular twitchings often occur, the patient may complain of dimness of vision, and may pick at the bedclothes. His consciousness usually becomes clouded, and he may ultimately pass into a comatose state, lying motionless and unconscious, sometimes with partly open eyes. Mucus collects in the throat, producing the so-called "death rattle". The heart gradually becomes weaker, and the pulse more feeble, rapid and often fluttering, except in some cases of brain disease in which it may remain full and bounding. The respirations become slower and shallower and are sometimes irregular or sighing.

#### **Signs of Death.**

The signs of death are cessation of respiration, disappearance of the pulse, coldness of the body and absence of all movements ; ultimately rigidity, or rigor mortis, develops. It may, however, be difficult to determine when life is finally extinct, particularly in cases of sudden death. There may be transient cessation of breathing in syncope or states of coma. In some conditions, breathing may be so faint as to be imperceptible by ordinary observation ; a cloud of moisture on



a mirror held in front of the mouth indicates that respiration is still going on. The absence of the pulse does not prove that the heart has ceased to act, and its beating may still be heard by examination with the stethoscope by the doctor. Coldness and rigidity are sometimes seen in cataleptic states. If bleeding occurs when the skin is pricked by a needle, life is not extinct.

**Rigor mortis** is the term applied to the rigidity of muscles which occurs after death. As a rule it develops first in the jaw and spreads downwards. In some cases, it occurs within fifteen minutes after death ; in others, it may not appear for twelve or twenty-four hours afterwards.

### Care of the Dying.

When a patient shows signs of approaching death, the doctor should be informed. It is necessary that the patient's relatives or friends should be notified, and also the minister of the religious denomination to which he belongs, in order that the patient may be given an opportunity of receiving the last sacrament of his church, or that the minister may be present at the time of death.

The patient should be placed in a private room if possible ; if he is in a dormitory, screens should be put round the bed.

A nurse should remain constantly in attendance on a patient whose death is regarded as imminent, and everything should be done to make him as comfortable as possible. The lips may be moistened with water at intervals, sweat wiped from the face, and mucus, which often collects round the mouth and nostrils, removed with a piece of lint or cotton wool. Care should be taken that the patient is not troubled by flies.

Relatives and friends who visit the patient should be received with kindness and sympathy.

A note should be made of the exact time when death occurred, and the names of the persons present should be recorded.

In cases of sudden or unexpected death, or of death due to accident or violence, the doctor must be notified immediately, and the body must not be moved until permission has been obtained. A detailed record must be made of the circumstances associated with the death. The names of the persons who witnessed the accident or act of violence, if any, and of those who were present at the death of the patient must be noted.

The prescribed form of notice of the death of a patient must be handed to the clerk as soon as possible.

### **Care of the Dead.**

Two nurses should be detailed to attend to the body after death, and the duties should be performed quietly and with reverence and decency.

After the relatives have left, the patient's clothing, the pillows and the top bedclothing, except the sheet, are removed, and a waterproof sheet is laid under the body. Rings or other jewellery and artificial teeth are removed, washed, rinsed in antiseptic lotion and placed in an envelope or packet endorsed with the patient's name.

The eyes should be closed and, if necessary, kept shut by placing a pad of wet absorbent wool on the lids. The body should be straightened, and the knees, ankles and big toes tied to each other with pieces of bandage. The mouth is closed and kept in position by means of a bandage passing under the jaw and over the top of the head; a four-tailed bandage may be used for this purpose. The body is then covered with the sheet for about an hour or until it has become rigid. The sheet is then removed and the body washed from head to feet with soap and water to which an antiseptic may be added. The hair is brushed and neatly arranged, a woman's long hair being done in two plaits tied with a ribbon or a piece of bandage. The fingers and nails are cleaned and trimmed and, in the case of a man, the face may be shaved if necessary.

The nostrils, mouth, anus and vagina are plugged with cotton wool, as there is sometimes a discharge from these orifices after death.

Any wounds or ulcers should be covered with a clean dressing, and the nurse should be careful to protect herself from infection by wearing rubber gloves or covering any abrasions on her own hands or arms while changing the soiled dressings on the body.

The patient should be wrapped in a clean sheet or shroud. A card or label, on which the name, registered number, religion, date and time of death are written, should be pinned on the sheet.

If the patient has died from an infectious disease, the body must be washed with an antiseptic solution, such as 1 in 40 carbolic, and it may also be wrapped in a sheet soaked in antiseptic lotion before removal to the mortuary.

The clothing and personal effects of the deceased patient should be collected and carefully stored until instructions as regards their disposal have been received. A list of the articles should be made and a copy of it handed to the clerk.



## PART III.

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# BODILY DISEASES AND DISORDERS.

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## CHAPTER XXII.

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### INFLAMMATION, SHOCK AND COLLAPSE.

#### Inflammation.

Inflammation is the process which occurs in living tissue as a result of irritation, and is nature's means of trying to prevent the spread of infection through the body. Inflammation is usually due to the action of micro-organisms, i.e., living germs which produce toxins, or poisons, but it may also be caused by excessive heat or cold, or by mechanical injury.

Inflammation may occur on the surface of the body, or may be deeply seated in the organs. It may be confined to a very small area, for example, surrounding a small septic focus in the skin, or at the root of a decayed tooth. On the other hand, it may spread widely, as in erysipelas. In the part inflamed, the blood vessels dilate, that is, become wider, the blood flows more quickly, and there is thus an increased supply of blood to the affected part. There is later a slowing down of the blood flow, and the leucocytes or white blood corpuscles pass through the walls of the blood vessels and attack and absorb the micro-organisms. Some of the fluid part of the blood also passes through the blood vessel walls into the tissues, and dilutes the poisons or toxins or neutralises them by means of antitoxic substances produced by the body. The exuded fluid may also coagulate and so form a barrier to the further spread of the infection.

If the inflammation is not severe the normal blood flow may soon be re-established, and some of the leucocytes return to the circulation through the lymphatics.

In a more severe infection masses of cells are destroyed, and the increased volume of blood present (hyperaemia), is not sufficient to deal with the situation. In such cases **pus** may be formed. This is a liquid substance consisting of exuded serum containing dead cells, leucocytes and micro-organisms. This process is known as **suppuration**. When a collection of pus forms beneath the skin, or in the deeper tissues, it is known as an **abscess**. When a severe infection results in the death of a large amount of tissue, the condition is known as **necrosis** or **gangrene**.

After the inflammation has subsided, the tissues are restored by the growth of new cells; in severe cases accompanied by suppuration, the damaged part is repaired by fibrous tissue, resulting in the formation of a scar.

*Symptoms.*—The local symptoms of inflammation are redness, swelling, heat and pain. If, for example, a boil on the arm is examined, it will be noted that the inflamed area is red and swollen, and that it is warmer than other areas of skin elsewhere on the arm. The patient complains of pain and tenderness in the affected area. In many cases there are general symptoms such as rise in temperature and pulse rate, furred tongue and headache. When suppuration occurs, the symptoms described above become more severe; there may be increased local discomfort at the site of infection, and in some infections there may be a typical fever in which the temperature rises in the evening and falls in the morning, the fall being often accompanied by profuse perspiration. If the suppuration continues the patient gradually becomes exhausted.

*Treatment.*—This is directed to the removal of the cause, if possible, and the provision of rest for the affected part.

The most important remedies used locally, i.e., at the site of the inflammatory condition, are heat or cold, the latter usually only in the earlier stages of the condition.

Cold is applied by means of evaporating lotions, compresses, or by the use of the ice bag. In cases of inflammation of the meninges, or covering membranes of the brain, a special

cap is sometimes used containing tubes through which cold water is run. The application of cold acts by contracting the blood vessels, thus reducing the supply of blood to the inflamed area. Heat, on the other hand, increases hyperaemia, and is usually applied in the form of hot fomentations or poultices; it tends to assist the curative effects of the inflammatory process and at the same time helps to relieve the pain.

If pus has formed, it may discharge spontaneously through an opening made by the destruction of the tissues and skin, or an opening may be made by an incision. After free drainage of pus has been obtained, the infected part is treated with antiseptic lotions and dressings.

In cases where an inflammatory condition is present, general treatment, in the form of drugs, and special diet are usually prescribed.

### **Shock.**

Shock is a condition of lowered vitality associated with a reduction of blood pressure. It occurs after serious surgical operations, profuse haemorrhage, injuries to internal organs, and also after comparatively slight injury to a sensitive organ, such as the testicle. Emotional stress may also be followed by a state of shock.

*Symptoms.*—The symptoms of shock vary from a feeling of faintness to complete prostration. The skin is pale, cold and clammy. The pulse becomes rapid, irregular, and later almost imperceptible. The respirations are slow and shallow, and the temperature is lowered. The pupils are dilated, and the patient may be confused or even unconscious. These symptoms may continue and may end in death. In cases, however, which respond to treatment, the pulse gradually becomes stronger, slower, and less irregular, and the respiration deeper. The cold sweat ceases, the temperature rises, often to 100° F. or higher.

*Treatment.*—In severe cases of shock, the immediate treatment is to put the patient to bed between warm blankets, and to rub him down with hot towels. The foot of the bed should be raised on blocks, in order to bring the patient's head



to a lower level than his feet, and thereby increase the blood supply to the brain. Stimulants such as alcohol may be given, except when there is haemorrhage, or when the patient is unconscious.

Time is often extremely important in such cases, and the nurse must have all possible requirements in readiness for the doctor's use. Amongst these are a hypodermic syringe (for the injection of strychnine, adrenalin, or morphia), normal saline solution, and apparatus for rectal injection. Brandy may also be required.

### **Collapse.**

Collapse is the term applied to a condition similar to shock, except that its onset is gradual, and that it usually occurs during the course of some exhausting disease. This condition may supervene in cases of prolonged vomiting or diarrhoea.

The general treatment is similar to that described for shock, combined with treatment of the primary illness.

## CHAPTER XXIII.

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### INFECTION AND IMMUNITY.

The subject of micro-organisms and their relation to disease is dealt with in Chapter XIII.

Of the many different varieties of micro-organisms a comparatively small number are capable of causing disease. These harmful varieties are known as **pathogenic bacteria**, and each variety causes only one particular or specific disease. Thus the tubercle bacillus causes tuberculosis; the pneumococcus causes pneumonia, and so on. Some other diseases, such as scarlet fever or small pox, are also known to be due to micro-organisms, although these have not yet been identified. Again, abscesses, inflammation in wounds, and other forms of sepsis are very often due to the action of the micro-organisms known as **staphylococci** and **streptococci**, which are the commonest forms of pathogenic bacteria.

#### Infection.

By "infection" is meant the entry into the body of disease-producing germs which pass from one person (or animal) to another through the medium of air, water, food, clothing, or insects.

Before infection can take place two things are necessary :—

- (a) the presence of the micro-organism, and
- (b) the susceptibility of the body to the particular disease caused by that micro-organism.

The various methods by which bacteria gain entrance to the body are as follows :—

- (1) Through the alimentary system, e.g., the bacillus of typhoid fever, or of dysentery, may be swallowed in food, water, milk, etc.
- (2) Through the lungs, e.g., the organisms of phthisis and whooping cough may be inhaled with the inspired air.

- (3) Through the skin or mucous membranes. The bites of infected animals are known to transmit certain infections, e.g., mosquito (malaria), flea (plague). Any break in the surface of the skin from a mere pin prick to a large open wound may become infected with organisms. Usually the organisms remain localised in the area around the site of entry, where they produce poisons or **toxins**, which circulate in the blood and cause symptoms of general poisoning or **toxaemia**. Sometimes the bacteria themselves enter the blood stream and spread to all parts. This condition, a very grave one, is known as **septicaemia**.

Disease-producing germs are spread by various means, and infection may be conveyed by :—

**Air.**—Bacteria may attach themselves to particles of dust or minute droplets of moisture present in the air and cause disease by being inhaled. For example, sneezing or coughing by a person suffering from a common cold sends millions of micro-organisms into the air. Hence the rapid spread of colds amongst those confined together in a ward or room.

**Food.**—Uncooked food, such as salads, ice cream, etc., may be contaminated and carry infection, e.g. typhoid. Decomposed food may cause **ptomaine poisoning**. Even cooked food is not free from danger, as it may become contaminated after being cooked.

**Water** may be contaminated either at its source of supply or in tanks, etc., e.g. by typhoid.

**Milk** not only conveys infection but is also an excellent medium for the growth of certain bacteria. Milk may come from an infected animal, e.g., tuberculosis; or may be contaminated in handling, e.g., typhoid, diphtheria, scarlet fever.

**Clothing and Room Furnishings**, such as curtains, bed-clothing, books, etc., in fact, anything which has been exposed to infection, may harbour the bacteria or their spores, and infect people coming into contact with them.



**Flies and Insects.**—The housefly, because of its habit of feeding on filth and garbage, may be contaminated by disease germs, and transmit these to food on which it subsequently settles, e.g., typhoid and dysentery. The malarial parasite is carried by the mosquito, when it has bitten an infected individual. Fleas from infected rodents carry the germ causing plague.

**Earth.**—Any well-manured ground may harbour the germ causing tetanus.

**Carriers.**—A “carrier” is a person who, after having suffered from an infectious disease, appears to have recovered but still harbours the germs in this body or, as sometimes happens, a person who, after having been exposed to infection, carries the germs in his body but does not himself develop the disease.

### **Immunity.**

It has already been mentioned that each disease is caused by its own specific germ. Certain individuals, however, may be more or less protected against contracting a particular disease, in spite of the fact that germs causing the disease are present in their bodies. When this is the case, they are said to possess “immunity” to the disease.

Immunity may be—

- (i) Natural.
- (ii) Acquired.
- (iii) Artificial.

#### **(i) Natural Immunity.**

This is that form of resistance to disease which is common to a particular race of people or species of animal. All animals are immune to syphilis except man and monkeys. Rats and sheep are practically immune to tuberculosis. Measles is usually a mild disease amongst Europeans, but in certain races it has proved to be very dangerous.

(ii) **Acquired Immunity.**

This form of immunity follows an attack of an infectious disease. The cells and tissues of the individual attacked react to the infection by producing certain substances, known as **anti-bodies**, which prevent the growth of the particular organism causing the disease. In other words, the individual has acquired an immunity to the disease. With some diseases, e.g., influenza, the immunity is short-lived ; with others, e.g., small-pox, scarlet fever, whooping cough, it lasts throughout life.

(iii) **Artificial Immunity.**

This may be (*a*) Passive, or (*b*) Active.

(*a*) **Passive immunity** is produced by the injection of a serum containing anti-bodies. The serum is obtained from the blood of an animal which has been highly immunised against a disease by the injection of gradually increasing doses of the organism, e.g. anti-diphtheritic serum (diphtheria anti-toxin). Such a serum confers a temporary immunity against the disease, or, if given after the onset of the disease, assists the patient to overcome the infection.

(*b*) **Active immunity** may be brought about by vaccination or inoculation of an individual with living organisms, or with dead organisms and their toxins which have been specially prepared in the laboratory (bacterial vaccines). In this case it is called active immunity, because the individual produces his own anti-bodies, whereas in passive immunity these anti-bodies are formed in the blood of another animal, and then injected into the human being.

## CHAPTER XXIV.

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### DISEASES OF THE SKIN.

SYMPTOMS AND SIGNS—ECZEMA—ACNE—HERPES—URTICARIA  
—DRUG ERUPTIONS—BOILS AND CARBUNCLES—IMPETIGO  
—ERYSIPELAS—RINGWORM—SCABIES — PEDICULOSIS —  
BUGS AND FLEAS—ULCERATION—BEDSORES.

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### SYMPTOMS AND SIGNS.

#### Eruption or Rash.

This is the term applied to a condition of the skin, characterised by a change in colour or an outbreak of spots or other lesions on the surface.

A rash is often unaccompanied by any subjective symptoms, and, among mental patients, especially the more deteriorated, may be overlooked unless it is observed by the nurse. Special opportunities for such observation occur during the bathing of patients, when the entire body is exposed. A rash may be due to some simple and easily removable cause ; on the other hand, it is often an indication of some serious or infectious condition. The nurse should therefore draw the doctor's attention to any patient on whom a rash has appeared, and should be able to give an accurate description of what she has observed.

The following are the chief points upon which a description of the lesion should be based :—

#### (I) **Character.**

For convenience of description certain terms are used :—

- (a) **Macule.**—A spot of discolouration which is not raised above the skin and not larger than about the size of a pea. Large areas of redness are known as **erythema**.
- (b) **Papule.**—A small raised spot which contains no fluid. When larger than about the size of a pea, it is called a **nodule**.



- (c) **Vesicle.**—An elevation on the skin similar to a papule but containing serous fluid, e.g., chicken pox. When larger it is known as a **bulla** or **blister**.
- (d) **Pustule.**—Similar to a vesicle but containing pus, e.g. in the later stages of small pox.
- (e) **Wheal.**—A congested area of skin accompanied by swelling due to a slight exudation of serum. It is red with a white centre. It usually appears suddenly, lasts only a few hours and is accompanied by itching ; seen in urticaria.
- (f) **Crust or Scab.**—Dried serum or pus, covering an ulcer or wound.

## (2) **Situation.**

Where did the rash begin, and how has it spread? Certain diseases usually commence in definite areas, e.g., scabies between the fingers. Is the eruption always present in one place, or does it sometimes disappear and reappear elsewhere? Is it symmetrical, i.e., in corresponding areas on the two sides of the body?

## (3) **Duration.**

## (4) **Itching or Pain.**

Is the rash accompanied by itching or pain?

## **Pruritus.**

Pruritus, or itching, may accompany some visible disease of the skin, such as eczema. It may also be caused by the bite of some parasite such as the flea or louse, or by the irritation from some discharge from the nose, mouth, anus or vagina. People unaccustomed to the use of rough clothing may suffer from intense and almost unbearable itching when coarse garments are worn next to the skin. Apart, however, from these causes of itching in localised areas, there are certain internal conditions which are liable to produce a generalised itching, i.e., all over the surface of the body. Among such conditions may be mentioned jaundice and some forms of kidney disease.

## SOME COMMON SKIN DISEASES.

### Eczema.

This is an inflammatory condition in which the skin may be dry and scaly, but is usually moist (weeping eczema). The affected area is red, swollen, and partially covered with crusts. The patient may complain of pain in the affected area often accompanied by intense itching. The condition may become chronic.

Eczema may appear on any part of the surface of the body, but is most frequently found round the mucous orifices, as a result of some irritating discharge. For example, an eczematous condition is often seen in patients suffering from incontinence of urine. Any irritant substance, such as turpentine or some disinfectant soaps, may produce eczema on the hands of susceptible people.

*Treatment.*—In the acute stages rest in bed may be necessary, and a soothing ointment or lotion is usually prescribed. If the disease passes into a chronic state, the condition requires prolonged treatment involving much care and attention on the part of the nurse.

### Acne.

This is an inflammatory disease of the skin, affecting the sebaceous glands and the skin around them. The disease usually starts in early youth, and may continue for many years.

*Symptoms.*—It is characterised by the appearance in the first instance of “blackheads” (comedones). These are caused by the blocking of the ducts of the sebaceous glands. Crops of small red and hard papules next appear, mostly on the face and back of the shoulders. Some of these form pustules, which eventually break down and discharge pus, leaving small scars.

*Treatment.*—The application of local remedies may be prescribed. The nurse should give careful attention to the skin of the patient's face and back. As a preventive, frequent washing with soap and warm water should be employed, followed by thorough rinsing with cold water and rubbing with a rough towel.

### Herpes.

Herpes or shingles is an acute disease in which there is a typical lesion of the skin consisting of groups of vesicles on a bright red base. At the time of their appearance, the patient complains of severe neuralgic pains in the affected area. After a few days, the vesicles dry up and form crusts.

The rash usually appears only on one side of the body, and its distribution corresponds to that of a sensory nerve. The most common sites are on the chest wall, forehead, and the front of the thigh.

The condition lasts about three weeks.

*Treatment.*—This consists of protecting the vesicles, either by the use of an antiseptic dusting powder, or by painting with collodion and covering with cotton wool. The neuralgic pain is often very acute, and may require sedatives.

Eruptions of a herpetic type appear frequently on the lips during fever, in certain respiratory diseases, and in disorders of the stomach.

### Urticaria.

Urticaria, or nettle rash, is an eruption consisting of wheals. These appear suddenly and usually disappear after a few hours, but may be succeeded by another crop. Their appearance is accompanied by almost unbearable itching. This condition is frequently caused by the taking of some foodstuff, principally shell-fish or tinned food. It may also appear after the sting or bite of some insects.

*Treatment.*—This consists largely in the removal of the cause, the administration of an aperient, and the local application of a soothing ointment or lotion to relieve the itching.

### Drug Eruptions.

Skin eruptions may occur after the administration of certain drugs, e.g., bromides and iodides may cause a rash resembling acne; belladonna, an erythema or redness of the skin similar to the rash which occurs in scarlet fever; borax



may cause a scaly condition of the skin; and phenolphthalein may cause urticaria. Not infrequently bright red erythematous patches appear following an injection of antitoxic or other serum. Rashes may also occur in susceptible persons when their skin is exposed to the action of certain chemicals or irritant plants.

### Boils.

A boil, or furuncle, is a localised inflammation around the root of a hair. It is caused by a micro-organism (staphylococcus) and commonly develops as a result of local irritation, such as friction of the collar on the back of the neck. Boils are prone to occur in persons suffering from diabetes, kidney disease, or general debility. They may be single or multiple, and occur most frequently on the face, neck, and buttocks.

*Symptoms.*—A red tender swelling appears around the hair root, and grows steadily larger. Sometimes the inflammation begins to subside after three or four days, and the swelling gradually disappears, (the so-called “blind boil”). More commonly, however, the boil continues to increase in size for about a week, at the end of which it breaks down and discharges a small amount of serum or pus. In the centre of the boil is a small mass of dead tissue, the “core”; this separates after two or three days, leaving an ulcer which rapidly heals.

Fever and other general symptoms are usually absent, but boils in certain situations, such as the nose and ear, may be very painful, and attended by considerable constitutional disturbances.

*Treatment.*—In the early stages, painting the area with strong tincture of iodine or some other application may cause the inflammation to subside. When the boil is painful, hot fomentations may be applied. After it has ruptured, wet antiseptic dressings are required, and the surrounding parts should be treated with an antiseptic to prevent the spread of the infection to other hair follicles.

### **Carbuncles.**

This term is applied to a condition in which a mass of boils occurs from the infection of several adjacent hair follicles. It is more severe in its local effects and more serious constitutionally than a boil, being often accompanied by fever and signs of blood poisoning and prostration. Carbuncles are usually single and occur most frequently in places where the skin is thick, particularly on the back of the neck.

*Symptoms.*—A carbuncle begins as a hard, red, painful swelling in the skin and increases in size in all directions; after some days it forms a large, deep-seated swelling and may cover an area of six inches or more. The centre portion of the swelling then softens, ruptures at several different points, and blood-stained pus is discharged from the openings. Fresh openings form and the discharge becomes more profuse and contains sloughs or pieces of dead tissue, grey in colour. The inflammation gradually subsides and the discharge of sloughs and pus ceases, leaving an ulcerated surface underneath.

*Treatment.*—This consists of dressing the part in accordance with antiseptic principles, after the area has been freely incised by the doctor. The general treatment consists of conserving the patient's strength and ensuring regular daily action of the bowels.

### **Impetigo.**

Impetigo is an inflammatory condition of the skin due to micro-organisms and characterised by the formation of pustules. These soon rupture, and discharge highly infectious pus which dries up and forms a thick yellowish scab. The face is the most common site of infection, but, unless careful treatment is given, the disease is liable to spread to other parts of the body.

*Treatment.*—The scabs are removed by the application of a starch poultice, or by soaking with warm carbolic oil. An antiseptic is then applied. The greatest care must be taken to prevent the spread of infection in the ward, and particular attention must be given to the keeping of the infected patient's washing materials entirely separate from those of others,



### **Erysipelas.**

Erysipelas is an infectious disease characterised by an inflammatory condition of the skin or mucous membrane. It occurs as a result of infection of a wound or abrasion by a micro-organism (streptococcus). Some individuals, however, are liable to attacks without apparent injury, and in such cases the disease usually commences where the skin and mucous membrane join, e.g., at the mouth or nostril.

*Symptoms* —The disease usually begins with sudden high fever accompanied by headache and, not infrequently, vomiting. The skin around the wound or abrasion becomes red, swollen and tender, the inflamed area having a sharply defined raised edge. The inflammation spreads rapidly, while at the same time the areas originally attacked show signs of subsiding. When the face is affected there is usually considerable swelling of the eyelids and the ears, and there is a definite risk of the infection spreading to the meninges.

The disease may last for several weeks and, while inflammation is present, there is usually continued high fever which may seriously exhaust the patient.

*Treatment.*—Isolation is desirable, but not absolutely necessary, provided that the most careful precautions are taken against the spread of the infection. The nurse in attendance upon the case must on no account attend to dressings of other patients. All dressings used on the infected patient must be destroyed by burning, and, if instruments have been used, these must be carefully sterilised.

Local applications will be prescribed by the doctor. Various symptoms such as restlessness, insomnia, hyperpyrexia, etc., call for treatment as they arise. Careful attention to diet and other means of maintaining strength must be adopted. In severe cases, some stimulant such as alcohol may be necessary.

### **Ringworm.**

Tinea, or ringworm, is caused by the growth of a minute fungus which usually attacks the scalp, producing a number of bald patches varying in size from a "tickey" to a halfcrown.



In these bald patches are seen the stumps of brittle and broken hairs. The disease is chiefly found in children. The nurse must see that the patient is immediately isolated, and that pillow slips, brushes and combs, which may be contaminated, are thoroughly disinfected or, if necessary, destroyed.

Another form of ringworm caused by a different variety of fungus is found in the skin of the body and limbs.

### **Scabies.**

Scabies is an eruption due to infection of the skin by a very small parasite (*Sarcoptes Scabiei*). A similar type of parasite causes mange in animals.

*Symptoms.*—The eruption appears in the form of burrows and small papules. The burrows have the appearance of short white lines and are caused by female parasites which penetrate the skin for the purpose of laying eggs; sometimes, with the aid of a lens, it is possible to see the shiny white body of the parasite at the end of the burrow. These lesions are found most frequently between the fingers or toes, and are also common at the flexures of the wrists and axillae.

The burrowing irritates the skin, with the result that a red inflammatory area appears. The condition is accompanied by intense itching which is most severe when the body is warm, and for this reason the greatest discomfort is usually felt when the patient is in bed. The appearance of the rash is complicated by numerous scratch marks.

It is most important that this disease should be noticed and promptly treated, because untreated cases are likely to spread the infection rapidly to others.

*Treatment.*—The treatment of this disease is carried out almost entirely by the nurse. It is, therefore, essential that she should be fully acquainted with the details and objects of the treatment.

Two things are essential :—

- (1) The opening of the burrows, making destruction of the parasite possible.
- (2) Sterilisation of all infected clothing.

The patient should be placed in a hot bath and allowed to soak for about a quarter of an hour. He should then be made to stand up in the bath, and the whole of his body well lathered with soap, preferably soft soap. The forearms and hands, legs, and feet should then be scrubbed with a stiff nail brush, and the rest of the body vigorously rubbed with a rough flannel.

The patient is then dried, and the whole body covered with an ointment (usually sulphur). The patient is then put to bed. As the bedclothing may be permanently stained by the ointment, only old or worn sheets, etc., should be used. Sulphur ointment has to be re-applied on two successive days after the first application, but with some ointments only one re-application is necessary. The patient is kept in bed during this course of treatment and, twenty-four hours after the last application of the ointment, is given a bath and a complete change of clothing. All clothing and bedclothing used by the patient must be carefully disinfected.

The greatest care must be exercised by the nurse in carrying out this treatment. Careless or inefficient bathing in the first instance will leave numbers of burrows unopened, with the result that the parasite will be protected from the ointment and the patient will remain uncured, and possibly transmit the infection to others.

Too vigorous rubbing in the bath may tend to cause an eczematous condition after the application of the ointment. It is better, however, to err slightly on this side, rather than run the risk of having scabies introduced into a ward containing many patients.

### **Pediculosis.**

Pediculosis is the term used to denote infestation with lice.

There are three types of lice (pediculi) :—

- (1) *Pediculus Capitis*, or Head Louse.
- (2) *Pediculus Corporis*, or Body Louse.
- (3) *Pediculus Pubis*, or Crab Louse.



(1) **Pediculosis Capitis.**—The head louse can live for some days away from the human body. The lice wander about the scalp of the infected individual and may fall on to other people or on to cushions, chairs, etc. The parasite is greyish yellow in colour and measures about one-eighth of an inch in length. It may be seen in the hair or found by using a fine tooth comb. Usually its presence is confirmed by the finding of nits (or eggs) firmly attached to the hairs. The eggs are small whitish bodies about the size of a pinhole in a piece of paper. They may be mistaken at first for dandruff, but the fact that they cannot be pulled off the hair is a clearly distinguishing feature.

The chief symptom is more or less constant itching of the scalp. This is frequently accompanied by a papular rash at the back of the neck. In severe cases, the hair is often matted together, and the scalp covered with eczematous sores. The difficulty in hospital wards is, however, not so much with the obvious case, but with the patient whose infection is not suspected because he is of cleanly habits. In such cases there are but few parasites in the early stages, but itching and a slight inflammatory condition of the back of the neck should arouse suspicion and the hair should be carefully examined with a fine tooth comb.

*Treatment.*—To destroy head lice it is unnecessary to cut the hair except in the most severe cases. In the majority the following method is effective.

After thorough combing, the hair must be soaked with paraffin or 1 in 40 carbolic lotion. This should be done by placing the patient on her back with her head protruding over the edge of the bed, and with a basin below the head. The 1 in 40 carbolic lotion is poured over the hair until it is completely soaked. Great care must be exercised to prevent the lotion from reaching the eyes or remaining on the skin of forehead or neck. The hair is then lightly wrung out and bound up in a piece of lint soaked in the lotion. This is left on for an hour after which the hair is washed with carbolic soap. It will be found after the above treatment that the nits



still remain firmly adherent to the hairs. They may be removed by using a tooth comb dipped in warm vinegar; the vinegar dissolves the cement-like substance holding the nits to the hair, and makes their removal easier.

Combs and brushes which have been used must be sterilised. This may be done by placing them in carbolic lotion (1 in 20) for at least half an hour.

(2) **Pediculosis Corporis.**—The body louse wanders over the body sucking blood from the skin, but is rarely found on the naked body as it adheres to the clothing, with which it is removed. The parasites are generally found in the seams of the clothing.

The nits are also found adhering to the hairs of the cloth, and occasionally to the body hair of the patient.

*Treatment.*—After removal of the clothing a hot bath is given, followed by the application of sulphur ointment. The discarded clothing should be thoroughly disinfected, or, if necessary, destroyed.

(3) **Pediculosis Pubis.**—The crab louse is found most commonly at the base of the pubic hairs; the nits are dark in colour and not easily seen.

Attention is drawn to the condition by severe itching of the parts.

*Treatment.*—Pubic hairs should be shaved off, warm baths given daily, and the parts treated with the ointment prescribed.

### Bugs.

The common bed bug is a flat, reddish-brown insect about one-fifth of an inch long, which lives during the day in furniture, beds and in cracks in the walls and floors, and comes out at night to suck blood from human beings. It has a characteristic unpleasant smell arising from the secretion of special glands. Its bite produces a wheal, accompanied by hyperaemia and irritation,

Regular inspection of beds and bedding should be made, so that any stray parasites may be detected before they have time to breed. If the presence of bugs is suspected in a ward, all beds and bedding must be thoroughly examined. Bedsteads should be rubbed with paraffin, special attention being given to cracks and joints. Insect powders and sprays should be used freely, and the walls and floors scrubbed with disinfectant. If a ward is badly infested, fumigation may be required. This is the most effective means of ridding a building of these pests.

### Fleas.

These cause a characteristic skin lesion consisting of a small red spot, with a central point of darker colour, which does not disappear on the application of pressure.

### ULCERATION.

An ulcer is a sore or breach of surface of the skin or mucous membrane which does not tend to heal. There is usually a discharge of pus or blood-stained fluid from its surface. Ulcers tend to increase in size by the destruction of the tissues at their edges and they may penetrate deeply.

The chief causes of ulcerations are injury, varicose veins, infections and malignant disease (cancer).

Wounds or irritations of the skin in debilitated persons may be followed by inflammation of the skin leading to the formation of an ulcer. The circulation is stagnant in the tissues of parts affected by varicose veins, and ulcers are apt to develop as a result of slight injury owing to the unhealthy condition of the skin. In some diseases of the nervous system, the sensation and nutrition of the skin are impaired and ulceration may occur in parts exposed to pressure or irritation, e.g., in general paralysis bed sores are liable to develop, and in locomotor ataxia a chronic form of ulcer, called a **perforating ulcer**, is sometimes seen on the sole of the foot. Infection of wounds may be followed by ulceration, and syphilis and tuberculosis cause special varieties of ulcer. Some forms of

malignant disease originate in the skin and cause ulceration, and new growths from deeper tissues may also extend to the skin.

The following points should be noted by the nurse for the purpose of giving a description of an ulcer :—

- (a) The **situation, size and shape** of the ulcer. Varicose ulcers are seen on the legs ; some syphilitic ulcers have an irregular or serpiginous outline.
- (b) The **colour** of the ulcerated surface. This may be red in acute ulcerations or pale in the case of chronic ulcers.
- (c) The **edge** of the ulcer may be hard or undermined ; in some syphilitic ulcers the edge is abrupt and the ulcer has a punched-out appearance. In healing ulcers the edges may be observed to be gradually growing inwards over the ulcerated surface.
- (d) The **surrounding skin** may appear healthy in healing ulcers, or it may be inflamed and tender in acute and active ulcers. The skin surrounding a varicose ulcer is usually darkly pigmented and brown.
- (e) **Pain** and extreme tenderness are characteristic symptoms of certain forms of ulcers.

*Treatment.*—This consists of measures to remove the cause of the ulceration if possible. In addition the affected part must be kept at rest and protected from irritation and infection. Special dressings or applications will be prescribed according to the variety of ulcer, and operative treatment may be undertaken in some cases.

**Internal ulcers** may develop in the mucous membrane of the mouth and throat. Simple ulcers occur in the mucous membrane of the stomach and duodenum and these and other parts of the alimentary system may be invaded by malignant disease causing ulceration. The mucous membrane of the intestine is ulcerated in typhoid fever and dysentery.



### Bedsores.

These are ulcers or sores which result from the death or necrosis of areas of skin and the underlying tissues. They occur on the body and limbs of patients who have been confined to bed for long periods, and they are usually due to pressure or irritation which causes inflammation and subsequent ulceration of the skin. In a large majority of cases their occurrence is due to inefficient and careless nursing and may be prevented by proper care and attention.

Bedsores may develop on any part of the skin that is exposed to pressure or friction, but they usually occur over bony prominences or in places where the limbs are in contact with each other. They are most frequently seen over the sacrum, hips, heels and shoulder blades and on the inner sides of the knees. Unless the ulcers are promptly and efficiently treated, they increase in size and penetrate deeply into the tissues, and they may produce a state of general septic infection or blood poisoning.

The *causes* of bedsores are :—

(1) *Pressure*.—In illnesses of long duration, such as typhoid fever, paralysis and wasting diseases, sores may develop on any part of the skin which is subjected to continued pressure. Similar sores may also be caused by the pressure of splints.

(2) *Friction and Irritation*.—The skin may be irritated and become inflamed as a result of the bottom sheet not being kept smooth and free from creases, or from crumbs, etc., left in the bed. Lack of cleanliness and contact with urine also cause irritation and inflammation.

(3) *Injury*.—Inflammation of the skin may be due to injury or bruising caused by roughness in giving a patient the bedpan or careless handling in other ways.

(4) *Paralysis*.—In cases of paralysis due to disease of the spinal cord, in general paralysis and in some other diseases of the nervous system, the nutrition of the skin is impaired as a result of defects in the nerve supply, and acute bedsores are

likely to develop with only slight provocation. In this form of bed sore, a blister may appear suddenly and this is followed by rapid and extensive necrosis of the skin and tissues.

*Signs.*—The first indication of a bed sore is usually an area of discolouration or redness on a part of the skin which is exposed to pressure. The part then becomes swollen or oedematous and a blister forms which afterwards ruptures leaving an ulcerated surface. In more advanced cases, some of the underlying tissues die and pieces of dead tissue form sloughs which become separated from the healthy tissue underneath.

### **Preventive Treatment of Bedsores.**

The condition of the skin should be carefully observed whenever the patient is washed, in order that any patch of discolouration may be noticed at once. The under sheet must be kept free from creases, crumbs and other causes of irritation, and the bedclothing must be changed as soon as it becomes soiled or wet. The patient should be washed regularly and care should be taken that all trace of soap is removed and the skin thoroughly dried after washing. A piece of lint may be used to dry parts of the skin instead of a rough towel. The parts subject to pressure should be rubbed with spirit lotion and afterwards dusted with powder. The position of the patient should be changed every two hours or oftener to avoid continued pressure over the same place. A water bed may be required in some cases, or air rings or cushions may be used to relieve local pressure. Care should be exercised in giving the bedpan, in order to avoid injury to the skin. Special applications to harden the skin are sometimes ordered by the doctor. If any red patches of skin are noticed, they should be gently massaged with ointment and their appearance reported to the doctor.

Cases of incontinence require special attention; they should be inspected frequently, and the sheets must be changed immediately after they have become soiled. It is also essential that the parts of the skin soiled with urine or faeces should be well washed and dried.

*Treatment of Bedsores.*—When an ulcer has formed, the part is washed with an antiseptic lotion and a dressing is applied. If a slough forms, hot boracic fomentations may be ordered and the ulcer should be washed and syringed with an antiseptic lotion. In severe cases charcoal poultices are sometimes used to hasten the removal of the slough and, after it has separated, a gauze dressing, cut to fit the ulcer, is applied.



## CHAPTER XXV.

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### **DISEASES OF MUSCLE, BONE AND JOINTS.**

MUSCULAR RHEUMATISM—STRAIN—CONTRACTURES—  
SYNOVITIS—ARTHRITIS.

#### **Muscular Rheumatism.**

This is the commonest ailment affecting muscle and is a condition frequently observed in the muscles of the neck and chest, and in those of the lower part of the back. The patient complains of pain and tenderness in a muscle or group of muscles.

#### **Lumbago.**

In this form of muscular rheumatism there is a dull aching pain in the muscles of the back, greatly aggravated by movement. The onset is often sudden, suggesting possible strain. Lumbago is, however, usually associated with some slight general disturbance and mild pyrexia.

*Treatment.*—Cases of muscular rheumatism require rest, and care in handling to avoid unnecessary pain which, in some cases, may be acute. Local applications will probably be ordered, and the nurse should ascertain whether or not the dressings must be covered with G.P. tissue or oiled silk as this covering may result in the production of blisters when liniments are used. The condition is often treated by the application of heat, and in the convalescent stage, massage and passive movements are helpful. The diet is always of great importance ; sugar and alcohol should be avoided.

#### **Tumours.**

Tumours in the muscles may also produce pain and tenderness, generally accompanied by swelling of the part.

### Strain.

A muscle or its tendon may be strained as a result of violent effort which causes overstretching or even rupture of its fibres. The muscles most commonly strained are those of the back and of the calf of the leg, and the injury is characterised by the sudden onset of severe pain and inability to move the part. The condition is treated by rest and the application of heat.

### Contractures.

A contracture is the shortening of a muscle which often occurs when the opposing muscle or group of muscles is paralysed. The tendency in such cases is for a limb to be deformed, generally in a position of flexion. In cases where a patient suffers from paralysis of a temporary nature, contractures may often be prevented by adopting methods which keep the limb in correct position until the affected muscles recover. Contractures are often found in advanced and bed-ridden cases of general paralysis. They may also occur in hysterical paralysis or as a result of severe burns.

Changes in muscles or groups of muscles are often an indication of disease of the nervous system. As a result of nervous disease, muscles may show signs of weakness or actual wasting. A similar condition may also occur as a result of continued disuse of a group of muscles, e.g., in the muscles of a limb kept motionless by splints.

### Diseases of Joints.

The nurse's attention will be drawn to the existence of some disease of the joints, by the presence of one or more of the following symptoms at the affected joint—redness, tenderness, pain, heat, swelling, deformity, and loss or limitation of range of movement.

**Synovitis**, or inflammation of the membrane lining the joint, may be caused by certain diseases, such as rheumatism, syphilis or tuberculosis. Very often it follows some injury (**traumatic synovitis**) ; the knee joint is most frequently affected,

the condition being known popularly as “ water-on-the-knee ”. There may also be considerable stiffness and limitation of movement in a joint due to a diseased condition of the synovial membrane.

**Arthritis** is the term applied to inflammation of a joint, and may be caused by disease or injury. Inflammation of the larger joints is found in acute rheumatism and gonorrhoeal rheumatism. The metatarso-phalangeal joint of the great toe may be acutely inflamed in **gout**.

Chronic inflammatory conditions in joints are found in association with rheumatism and rheumatoid arthritis, syphilis, tuberculosis, etc., and are often accompanied by deformity of the joint. Deformities of joints may be due to the presence of new bony growth round the edges of the articular surfaces in chronic rheumatism.

**Unnatural mobility**, or an increase in the range of movement of a joint, occurs in certain diseases as a result of absorption of the heads of the bones forming the joint. This occurs in tabes, often without any complaint of pain by the patient, and is known as **Charcot's joint disease**.

Bones are liable to many forms of disease, such as inflammation (**periostitis** and **osteitis**), tuberculosis or tumours. The main indications are the presence of pain, tenderness, swelling, or deformity. In acute inflammatory conditions fever is usually present.



## CHAPTER XXVI.

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### **DISEASES OF THE CIRCULATORY SYSTEM.**

DISEASES OF THE HEART—SYMPTOMS AND SIGNS—VALVULAR DISEASE—PERICARDITIS—ENDOCARDITIS.

DISEASES OF ARTERIES AND VEINS—ARTERIO-SCLEROSIS—PHLEBITIS—VARICOSE VEINS—HAEMATOMA AURIS.

### **GENERAL SYMPTOMS AND SIGNS OF HEART DISEASE.**

The chief symptoms of heart disease are :—

- (1) Dyspnoea.
- (2) Dropsy.
- (3) Cyanosis.
- (4) Palpitation.
- (5) Alteration of pulse.
- (6) Pain in region of heart.
- (7) Syncope.
- (8) Cough.
- (9) Digestive disorders.
- (10) Cerebral disturbances.

#### **(1) Dyspnoea.**

Dyspnoea, or shortness of breath, may be observed in cases in which there is no evidence of cardiac (heart) disease, as, for example, after severe exertion. It is, however, always a symptom when any diseased condition of the heart muscle is present. In the early stages of the disease, it may hardly be noticed, even by the patient himself, but as the disease progresses even slight exertion produces some dyspnoea. In the later stages it often becomes so bad that the patient is unable to breathe when lying down, and has to be nursed propped up in bed or sitting in a chair. This state is known as **orthopnoea**. Whenever, in the course of her duties, a nurse observes that a patient shows signs of shortness of breath not

accounted for by previous exertion, she should inform the medical officer, as dyspnoea is an indication, not only of heart disease, but of other morbid conditions such as anaemia and diseases of the lungs.

## (2) **Dropsy.**

Dropsy, or oedema, is an accumulation of fluid in the tissues under the skin, or in the body cavities, and is a frequent symptom in some forms of heart disease, particularly in disease of the mitral valve. If true oedema is present and the finger is pressed into the swelling over a subcutaneous bone such as the tibia, the depression made by the finger remains for a short time, and then gradually fills up again. This characteristic sign of oedema is known as "pitting on pressure." The term **ascites** is applied to an accumulation of fluid in the abdominal cavity.

As dropsy is a prominent symptom in diseases of liver and kidney, as well as in heart disease, a short description of the essential features of each variety is given here for purposes of comparison.

**Cardiac Dropsy.**—Oedema is first noticed in the feet and ankles at the end of the day if the patient has been up and about, or in the back if the patient has been confined to bed. Usually, when this symptom is present, dyspnoea is also present.

**Hepatic Dropsy** (dropsy with disease of the liver).—In hepatic dropsy the accumulation of fluid begins in the abdomen and symptoms of breathlessness follow abdominal distension; in heart disease they appear before the dropsy.

**Renal Dropsy** (dropsy with kidney disease).—As a rule this appears first in the skin under the patient's eyes and is noticed in the morning. Oedema of the ankles may appear at the same time, but this is equally noticeable in the morning after a night's rest. This serves to distinguish it from cardiac dropsy, which in the early stages subsides after a night's rest and reappears in the evening.

When an oedematous condition exists in a limb, the development of some skin trouble is likely. The limbs should be raised to the same level as the body and kept warm. Often the application of an elastic bandage gives considerable relief to the patient and assists in preventing the development of oedema.

### (3) **Cyanosis.**

This is the term applied to the bluish discolouration of the skin and mucous membranes caused by deficiency of oxygen in the blood which occurs when the circulation is defective ; it is therefore a common symptom in heart disease.

Cyanosis may first appear in the nails, but is more often noticed in the lips, nose and ears, and also in the fingers and toes. The discolouration varies from slight lividity to a dark purple tinge seen in severe cases of heart failure.

### (4) **Palpitation.**

Palpitation is the term applied to the condition in which the heart beats forcibly or irregularly and the individual is conscious of its action. It signifies an increased action of the heart so forcible that it is actually felt by the patient, and is a normal experience after severe exertion or sudden fright. It is also a common symptom of indigestion, or may result from oversmoking. It is usually present in heart disease of any kind.

### (5) **Alteration of Pulse.**

The nurse should utilise every opportunity of studying the normal pulse ; by so doing, she will more easily detect abnormalities when they are present. The pulse may be unduly rapid (**tachycardia**), or considerably slower than normal (**bradycardia**). **Irregularity** (i.e. different intervals of time between beats) is a frequent indication of cardiac disorder. An occasional missed beat (or **intermittent** pulse) may be due to some unimportant cause, but, when the irregularity is accompanied by increased pulse rate and there is great variation in the intervals between beats, the condition is often extremely serious. Another grave sign is when the strength of the pulse varies even if the rate remains regular, e.g., one powerful beat followed by a small beat at regular intervals (**pulsus alternans**).



### (6) **Pain in the region of the Heart.**

This symptom is probably commoner in those who think they have diseased hearts than in actual cases of heart disease. It must, however, be clearly understood that pain in the region of the heart (precordial pain) does occur in cardiac disease, and complaint of such pain, especially if accompanied by breathlessness, should always be reported to the doctor.

The pain associated with heart disease varies from a mild sense of discomfort in the chest to extremely severe cramp-like pains of sudden onset which spread down the left arm and sometimes through to the back (**angina pectoris**). If a patient is known to suffer from anginal attacks, the nurse should obtain definite instructions as to the measures which she must adopt for the immediate relief of an attack pending the arrival of medical aid.

### (7) **Syncope.**

Syncope or fainting is due to temporary anaemia of the brain, and may be observed in patients suffering from heart disease. Attacks of giddiness without actual fainting are also seen in some cases. Syncopal attacks may be preceded by a feeling of weakness, giddiness and nausea. During the attack consciousness is lost. The face becomes pale, the lips blue and the patient breaks out into a cold sweat, the respiration is extremely shallow, and the radial pulse almost imperceptible. The actual attack may last some minutes, after which the patient makes a gradual recovery.

Syncope is not necessarily a symptom of heart disease, and may occur in apparently healthy people from causes such as unpleasant sights, poorly ventilated rooms, bad news, terror, etc. The nurse should note, however, that in the absence of an obvious cause the heart should be suspected. In mental hospitals it is specially important that the nurse should be able to differentiate between syncope and a minor epileptic fit (*petit mal*)—not always an easy matter. Amongst other distinguishing features it should be noted that in *petit mal* there is often an aura, and the onset and recovery are sudden.

(8) **Cough.**

This cannot be regarded as a primary symptom of heart disease, but, owing to the congestion of the blood vessels in the lungs which occurs in some forms of heart disease, cough is sometimes present and may be accompanied by expectoration of blood-stained mucus, or by a definite haemoptysis.

(9) **Digestive Disorders.**

Digestive disorders may be present; they are due to either deficient blood supply or congestion of the alimentary organs.

(10) **Cerebral Disturbances.**

The mental nurse should realise that cerebral or mental symptoms may appear as a result of alteration of the blood supply to the brain consequent upon cardiac disease, particularly aortic disease.

All the above symptoms may appear separately in association with disease other than that of the heart. Heart disease cannot be diagnosed on symptoms alone; this is one of the reasons why a nurse should never inform a patient of her opinion of the cause of any symptom. It is, however, one of her most important duties to convey to the doctor an accurate description of the symptoms she has observed.

### **FORMS OF HEART DISEASE.**

The heart is enclosed in a membranous sac, the pericardium, its walls are composed chiefly of muscle, the myocardium, and its cavities are lined by a membrane, the endocardium. All these three structures are liable to inflammation, known as **pericarditis**, **myocarditis** and **endocarditis** respectively. In endocarditis, permanent damage to the valves of the heart often results owing to the fact that the valves consist of a fold of endocardium, strengthened by fibrous tissue. Pericarditis and myocarditis are also a frequent cause of some permanent damage to the tissues of the heart.

### Valvular Disease of the Heart.

Disease of the flaps or cusps of a valve may cause a narrowing of the valvular opening through which the blood passes, or their thickened edges may prevent complete closure of the valve, with the result that blood escapes backwards through the opening. In either case the heart has to pump more forcibly in order to overcome the obstruction to the flow of blood and, as a consequence, the heart muscle becomes enlarged and thickened, a condition known as **hypertrophy**. As long as this increased power of the heart muscle is able to make up for any loss of efficiency in the heart's action due to damaged valves, **compensation** is said to have taken place, and the patient may be able to lead a more or less normal life. Such a hypertrophied heart readily weakens, however, if subjected to any special strain from illness, overwork or advancing years. Under these circumstances the circulation is no longer efficiently maintained, the cavities of the heart become over-distended with blood, and its walls overstretched (**dilatation**). This state is known as **failure of compensation**. Dilatation may also arise, in the absence of valvular disease, when there is a diseased condition of the heart muscle. In such cases, if the dilatation is pronounced, enlargement of the cavities may stretch their openings to such an extent that the valves cannot close properly.

### Acute Pericarditis.

Pericarditis is commonly caused by rheumatic fever, but may also occur in pleurisy, infectious fevers, etc.

There are two stages of the disease :—

- (i) Inflammation of the pericardium.
- (ii) Effusion of fluid into the pericardial cavity.

*Symptoms.*—The patient is depressed and looks anxious and ill. The temperature is raised, the pulse is rapid, and the respiration rate is increased. The patient complains of severe pain over the heart and tenderness on pressure over the cardiac area. In two or three days the pain and tenderness become less acute as an effusion of fluid takes place which separates the inflamed surfaces of the membrane, but the other symptoms persist.



The acute condition may last two or three weeks and must always be regarded as a very serious one.

*Treatment.*—This consists in ensuring *absolute* rest in bed for the patient. A light fluid diet (milk, beef-tea, etc.,) will probably be ordered. Local and general treatment will be prescribed by the doctor. A hypodermic syringe and stimulants such as sal volatile and brandy should always be at hand in case signs of failing heart appear.

### Endocarditis.

Endocarditis, or inflammation of the valves and lining membrane of the heart, is a condition which usually arises as a complication of some other disease, very commonly rheumatic fever. The general symptoms are vague, and the detection of the disease is a matter for the doctor. The condition may last for weeks and may cause permanent damage to the valves.

*Treatment.*—This is similar to that of pericarditis, the most important need being complete rest in bed. The patient must not be allowed even to turn himself in bed. The object of this is to aid recovery from the inflammatory condition by preventing unnecessary action of the heart, and to diminish the possibility of a fragment of blood clot or other material from a diseased valve being broken off and carried away in the blood stream to other parts of the body, where it may enter a blood vessel and so block the circulation. This occurrence is known as **embolism**.

### *General Nursing Treatment of Heart Diseases.*

The nursing of cases suffering from heart disease in mental hospitals differs very considerably from similar nursing in general hospitals. In the latter, as a rule, only patients presenting evidence of heart failure will come under the nurse's care, but in mental hospitals all degrees of heart disease will be encountered. Under these circumstances it is essential that the nurse should receive precise instructions regarding the treatment to be given to patients suffering from heart disease, and that she should know precisely what limitation of their activities must be enforced. Many individuals known to have

some form of heart disease are quite capable of carrying on their normal activities, at any rate for a time, and unnecessary restrictions are naturally resented and ultimately harmful. It is therefore impossible to lay down general rules for the nursing of heart cases, each one having to be considered individually. Where, however, there is evidence of approaching failure of the heart, rest, both mental and physical, is essential. Every precaution must be taken to avoid fatigue, sudden or severe strain, or undue worry and excitement on the part of the patient, and strict attention given to the prescribed treatment and diet.

### DISEASES OF THE ARTERIES.

In health, the arteries, by virtue of the composition of their walls, are able to expand or contract and so to increase or diminish the quantity of blood passing through them.

#### Arterio-sclerosis.

Arterio-sclerosis, meaning arterial hardening, is a term used to denote conditions in which there is thickening and loss of elasticity of the arterial walls. In one of these diseases, calcification or deposit of lime salts takes place in the inner coat, causing the arteries to become hard and brittle, a condition called **atheroma**.

Sclerosis of the arteries usually occurs in people of advanced age but may be found in middle life as a result of constant overwork, overindulgence in alcohol, syphilis or certain diseases of the kidneys. The loss of elasticity in the arteries produces a premature old age, which is probably responsible for the saying "a man is as old as his arteries". The sclerosis may be widespread through the body, or may be more or less localised to a few of the larger arteries, the latter condition being common with syphilis.

The chief results of arterio-sclerosis are :—

- (1) The thickening and loss of elasticity in the arteries imposes a heavy strain on the heart, which has to act more forcibly in order to pump the blood through the rigid and narrowed vessels ; usually the blood pressure is raised.

- (2) The areas supplied with blood by the affected arteries are imperfectly nourished. When the arteries of the brain are affected there is frequently progressive mental deterioration accompanied by small haemorrhages into the brain substance.
- (3) In severe cases the blood may clot in the artery and the flow of blood completely stop (**thrombosis**). This is followed by the death of the parts supplied by the artery. This condition in the arteries supplying the heart muscle (coronary arteries) is often responsible for anginal attacks or sudden death. Thrombosis of vessels in the extremities produces gangrene; the limb first becomes pale, cold and livid, then the toes or fingers become hard, black and shrivelled and eventually drop off.
- (4) The vessel wall, weakened at one spot, may balloon out forming what is known as **aneurism**. This swelling, because of the thinness of its walls, is liable to rupture. The aorta and larger arteries are most commonly affected, and rupture of an aneurism of one of these vessels causes fatal haemorrhage.
- (5) The diseased artery may rupture owing to some sudden strain.

## DISEASES OF THE VEINS.

### Phlebitis.

Phlebitis, or inflammation of a vein, may be caused by injury, or it may follow childbirth or some infectious disease such as typhoid fever. A blood clot or thrombus forms in the vessel at the site of the inflammation. The limb swells, the skin over the vessel becomes red and hard, and the patient complains of pain and tenderness.

*Treatment.*—The nurse must exercise the greatest care in handling the limb, in order to avoid dislodging the thrombus or clot and causing fragments to pass to other parts of the body in the blood stream; such an occurrence is fraught with great danger.



### Varicose Veins.

Veins have thinner walls than arteries, and any prolonged strain causing back pressure may cause bulging of the walls and prevent the valves from functioning properly, thus impeding the return of blood from the part. The veins become dilated, tortuous and filled with blood, the condition being known as **varicose veins**. The veins most commonly affected are those in the legs, in the scrotum, where the condition is called **varicocele**, and in the region of the rectum and anus, the distended veins being known as **haemorrhoids** or **piles**. The skin over varicose veins in the lower limbs is poorly nourished; it often becomes irritated and inflamed, breaks down, and a **varicose ulcer** results. Sometimes the veins themselves rupture, and the resulting haemorrhage, unless adequately controlled, may be very severe.

The main *symptoms* of varicose veins in the legs are an aching and dragging pain, and a feeling of numbness in the part. Generally the management of this condition consists of the application of an elastic stocking or crepe bandage, put on preferably after a night's rest and when the patient is in a recumbent position with the leg raised. In some cases it is necessary to have the affected veins excised by a surgeon or treated by the more recent methods of injection.

The dragging pain of varicocele may be eased by the wearing of a **suspensory bandage** made for the purpose. In some cases operative measures are necessary.

The *treatment* of haemorrhoids is in the doctor's province, but the nurse can do much to avoid unnecessary irritation and pain, by strict attention to cleanliness of the parts after a motion and avoidance of constipation which is always an aggravating factor in this condition.

### Haematoma Auris (Insane Ear).

This is a swelling of the outer ear caused by an effusion of blood and serum between the layers of cartilage, and is frequently seen in pugilists, rugby football players and mental patients. The swelling may assume large proportions and, in

the initial stages, show signs of inflammation. The swelling subsides after a time, leaving a much thickened and deformed ear, the "cauliflower ear". Amongst the mentally disordered, the condition is usually found in cases of mania, general paralysis and epilepsy. There is little doubt that it is usually caused by violence of greater or less degree. The lack of evidence, in some cases, of any injury or blow has led to the belief that it may occur amongst mental patients in the absence of violence, but this belief has lost ground, and it is now considered evidence of bad nursing if many cases arise in hospital.

The nurse should be on the look-out for the early signs of this condition as the deformity which results may be diminished by prompt treatment.

## CHAPTER XXVII.

### DISEASES OF THE RESPIRATORY SYSTEM.

SYMPTOMS AND SIGNS—ASTHMA—BRONCHITIS—PLEURISY—  
PNEUMONIA—BRONCHO-PNEUMONIA.

#### GENERAL SYMPTOMS AND SIGNS.

The main symptoms of diseases of the respiratory system are :—

- (1) Cough.
- (2) Expectoration.
- (3) Dyspnoea.
- (4) Pain in the chest.
- (5) Cyanosis.
- (6) Pyrexia.
- (7) Loss of weight.

#### (1) **Cough.**

Sneezing and coughing are forms of violent expiration and are nature's method of removing foreign bodies or the products of inflammatory processes from the respiratory passages. Both symptoms are caused by the irritation of nerve endings in the air passages. Cough may or may not be accompanied by expectoration.

**Varieties of Cough.**—The following points should be noted in order to enable the nurse to describe the character of the cough :—

- (1) **Wheezy cough** is mostly found in common colds and mild bronchitic conditions. This is at first dry and hard, but later is attended by expectoration.
- (2) **Bouts of coughing** of a distressing type, commonest in the early morning, are usually due to bronchitis.
- (3) **Suppressed** cough, where the patient appears afraid to cough on account of pain, is suggestive of pneumonia or pleurisy.
- (4) A **harsh**, husky cough is typical of laryngitis and throat conditions.



- (5) A brassy or **metallic** cough, difficult to describe but once heard never forgotten, is associated with aneurism or a tumour pressing on the trachea.
- (6) The **prolonged spasm** of coughing in whooping cough consists of a number of short coughs followed by a long drawn stridulous inspiration (the whoop). During the paroxysm the patient becomes cyanosed.
- (7) An **irritable cough**, present in the early morning and at bedtime, is associated with early pulmonary tuberculosis but may be due to excessive smoking.

## (2) Expectoration.

Any substance coughed up is known as expectoration, or **sputum**. Its appearance and character must be carefully noted, and whether it is coughed up readily or with difficulty. With children the sputum is seldom seen as it is usually swallowed.

The following table shows the varieties of expectoration and the diseases in which they are found :—

| Type of Expectoration. | Character of Sputum.   | Associated Type of Cough.                 | Diseases which may be Present.  |
|------------------------|--|---|---|
| Mucous. . . . .        | White, thin, clear and frothy  | Wheezy cough..                            | Mild bronchitis.<br>Early stages of acute bronchitis.                             |
| Muco-purulent          | Mucous, thick, with yellowish streaks of pus                                     | Paroxysmal bouts of coughing              | Later stages of acute bronchitis.<br>Chronic bronchitis.<br>Phthisis.             |
| Purulent. . . . .      | Thick, yellowish and devoid of air   | Paroxysmal bouts of coughing              | Pulmonary abscess.<br>Advanced phthisis.  |
| Foetid. . . . .        | Thick, dark brown in colour. Offensive odour. The so-called "prune juice" sputum | Paroxysms of coughing of deep, harsh type | Gangrene of lung.<br>Bronchiectasis, (dilatation of bronchial tubes).             |
| Rusty. . . . .         | Viscid, airless and rusty in colour  | Suppressed and painful                    | Pneumonia.  |
| Haemoptysis..          | Bright red or streaked with red; frothy, may contain blood clot                  | Paroxysmal, suppressed or brassy          | Phthisis (from rupture of pulmonary blood vessel).<br>Heart disease.<br>Aneurism. |

### (3) **Dyspnoea.**

Dyspnoea, or breathlessness, is a more or less common symptom in diseases of the respiratory system. The normal ratio of pulse rate to respiration rate is 72 to 18, or 4 to 1. The greatest variation in this ratio is seen in lobar pneumonia, in which the respiration rate may increase to about 40 to 50 per minute without a corresponding rise in the pulse rate, so that the pulse respiration ratio may be 3 or even 2 to 1.

Paroxysmal attacks of dyspnoea indicate asthma or heart disease. Persistent breathlessness accompanied by wheezing sounds from the chest is suggestive of bronchitis.

### (4) **Pain.**

When the pleura is inflamed (pleurisy), pain is usually a very marked symptom and is sharp and stabbing and much intensified by deep breathing and by coughing. In even the milder forms of bronchitis, the patient often complains of a "rawness" or feeling of soreness behind the upper part of the sternum. Frequent and severe paroxysms of coughing often cause discomfort or pain in the upper part of the abdomen, from the strain on the diaphragm and abdominal muscles.

### (5) **Cyanosis.**

When the lung tissue is extensively involved by disease, there is inadequate oxygenation of the blood, resulting in cyanosis.

### (6) **Pyrexia.**

Pyrexia accompanies all acute forms of respiratory disease, but in chronic conditions there may be little increase of temperature. In pulmonary tuberculosis, the temperature frequently rises several degrees in the evening, falling to normal next morning; the drop in temperature is often accompanied by profuse "night sweats". Amongst mental patients, respiratory disease may exist in the absence of obvious signs of illness. In these cases, pyrexia is the most constant symptom, and the nurse should therefore invariably take the temperature of any patient who appears to be indisposed,

however slightly. If this is done, there should be no possibility of a case of acute lung disease, such as pneumonia, being overlooked and remaining untreated.

#### (7) **Emaciation and Loss of Weight.**

On account of the frequent absence of obvious symptoms, especially in the more chronic forms of respiratory disease, the ward weight book is of great importance. The medical officer should be informed of persistent and unaccountable loss of weight in any patient, as this may be the first sign of the existence of some otherwise unsuspected respiratory disease

### **SOME COMMON RESPIRATORY DISEASES.**

#### **Asthma.**

Bronchial asthma is a respiratory disorder characterised by temporary paroxysms of dyspnoea which occur at intervals. It is supposed to be due to spasmodic contraction of the small bronchial tubes and swelling of their lining membrane as a result of which there is obstruction to the passage of air into and out of the lungs.

*Symptoms.*—During the paroxysm, which often occurs at night, the patient has great difficulty in breathing and may be unable to breathe except in a sitting posture. The face is pale, the expression anxious and distressed, and the pulse rapid; wheezing noises can usually be heard in the chest. After a period varying from a few minutes to several hours the attack subsides and the breathing becomes easier.

*Treatment.*—During an attack the patient should be placed in as comfortable a position as possible, supported if necessary by pillows or a bed rest. Various drugs may be given by inhalation, or medicated cigarettes may be smoked to relieve the condition. Patients subject to asthma should eat sparingly, and avoid heavy meals at bed time.



### Bronchitis.

Bronchitis is the term used to designate an inflammatory condition of the bronchial tubes. The condition may be either acute or chronic. It is usually due to infection by micro-organisms, but sometimes follows the inhalation of dust or irritant gases.

Some people are particularly liable to the disease because of a constitutional predisposition to it or as a result of previous attacks. It frequently follows a common cold when the original infection extends to the bronchi. Exposure to cold, damp weather and sudden changes of temperature are often sufficient to precipitate an attack.

The symptoms depend to a large extent on the size of the bronchial tubes affected. When the smaller tubes are involved, the affected area is larger and the condition is more serious. When the smallest bronchioles become inflamed the condition often spreads to the air vesicles, giving rise to the condition known as broncho-pneumonia.

*Symptoms.*—In acute bronchitis there is a moderate fever, 100° to 102°F., accompanied by a feeling of malaise; the patient complains of burning pain, or what is described as a “raw” feeling, behind the sternum, and a sensation of tightness of the chest. In the early stages there is a dry, hard, painful cough, usually accompanied by an irritation of the throat. At first the sputum is scanty and consists of clear, frothy mucus. Later it becomes more abundant and mucopurulent in character; at the same time the cough is less painful. If the smaller bronchial tubes are affected, the above symptoms are more severe and dyspnoea and possibly cyanosis may develop owing to interference with the proper aeration of the blood.

Chronic bronchitis often follows an attack and may last throughout the winter months and re-appear in subsequent winters. Cough and expectoration are the main symptoms of this condition which is not accompanied by fever.

*Treatment.*—In acute bronchitis, rest in bed is essential. Constant care must be taken to see that the room or ward is kept at an even temperature and that there is a plentiful

supply of fresh air without exposing the patient to draughts. In the more severe cases it may be necessary to use a bed rest to support the patient and facilitate breathing. Inhalations or the local application of poultices may be ordered. In some cases a steam kettle may have to be used to keep the air moist ; this often has a soothing effect. Medicines for internal use to relieve the cough and other symptoms and to assist expectoration will be prescribed by the doctor.

During the period of pyrexia the diet consists of nourishing fluids which should be given warm and in small quantities at frequent intervals, a precaution necessary to prevent the possibility of a dilated stomach impeding respiration. As soon as permissible the patient should be given a specially nourishing diet.

### **Pleurisy.**

Pleurisy is the term applied to inflammation of the pleura, the membrane which lines the walls of the chest and covers the lung. It must be remembered that the pleura consists of two layers of membrane between which there is a small amount of fluid which acts as a lubricant allowing these two layers to glide over each other during the respiratory movements of the chest wall and lung.

There are two **varieties** of pleurisy, viz., (a) Dry pleurisy ; (b) Pleurisy with effusion.

#### **(a) Dry Pleurisy.**

This may arise as a complication of phthisis, pneumonia, or one of the specific fevers. Injury to the chest wall is often followed by pleurisy.

*Symptoms.*—There is moderate pyrexia (100° to 102°F.) accompanied by a dry cough, and the patient complains of a sharp, stabbing pain in the chest. The pain is increased by movement of the chest ; as a result, the patient is afraid to take a deep breath or to cough freely, and the breathing is therefore “ shallow ” and the cough short and suppressed. The friction caused by the rubbing of the inflamed surfaces of the pleura can be felt by placing the hand on the affected side.

*Treatment.*—Confinement to bed. Diet as in acute bronchitis. Medicines may be prescribed for relief of the pain, and poultices or other external applications may be ordered for a similar reason. The chest may be strapped with adhesive plaster to limit movement and provide rest for the affected part.

**(b) Pleurisy with Effusion.**

The symptoms are similar to those of pleurisy except that when the serous fluid is exuded into the pleural cavity the inflamed surfaces are separated and the pain consequently relieved. As the amount of fluid increases, the patient tends to lie on the affected side in order to give the sound lung more freedom in respiratory movements. The fluid compresses the lung on the affected side and may drive out the air and put the organ out of action, and it sometimes causes actual bulging of the chest wall. The nursing is similar to that of dry pleurisy, except that it may be necessary to make preparations for aspiration of the fluid. If the fluid becomes purulent, the condition is known as **empyema**.

**Pneumonia.**

Pneumonia, or inflammation of the lung tissue, occurs in two different forms:—

- (a) **Acute Lobar Pneumonia.**—In this condition, as the name implies, one lobe of the lung is usually affected. The condition may affect the whole lung and sometimes lobes in both lungs (double pneumonia).
- (b) **Broncho-pneumonia.**—This is an inflammation of smaller bronchial tubes and adjacent lobules of the lung. It may appear in small patches all over one or both lungs.

**(a) Acute Lobar Pneumonia.**

Acute lobar pneumonia, or inflammation of the lungs, is a disease due to infection by a specific microbe (*diplococcus pneumoniae*). The inflammation causes consolidation of the lung tissue, which becomes airless. Any condition which



weakens the resistance of the body, e.g., exposure to cold, may bring on an attack. Pneumonia is a frequent complication of the acute fevers.

*Symptoms.*—The attack usually begins with a rigor accompanied by pain in the chest (sometimes referred to the abdomen), headache and a feeling of prostration. In children vomiting and sometimes convulsions may appear in place of the rigor. The temperature mounts quickly to  $103^{\circ}$  or  $104^{\circ}$  F., and remains at this level for approximately seven to nine days, varying little more than a degree during the course of each day. The appearance of a patient suffering from lobar pneumonia is often characteristic. The face is flushed, often more so on the side of the affected lung, the skin is dry, and frequently there is a herpetic eruption around the mouth and nostrils. The pulse rate is rapid, the respiration rate greatly increased and the breathing shallow. Normally the ratio between the pulse rate and the respiration rate is 4 to 1. In pneumonia the pulse-respiration ratio is 3 to 1 or as low as 2 to 1. There is a troublesome cough, usually of the short, suppressed type on account of pain from involvement of the pleura. The sputum, which appears about the third day of the illness, is scanty and sticky and has a typical rusty appearance. During the acute course of the illness, that is, during the first week, the above symptoms continue and the heart usually shows signs of the strain. Delirium is not infrequent during the acute stages of the disease. In a case which runs an average course, the pyrexia terminates by **crisis** about the seventh day, the temperature falling to approximately normal in a few hours. Along with the fall in the temperature the respiration rate drops almost to normal, and the pulse slows down. The patient usually sweats freely, and there is some danger of collapse. This crisis is expected on or about the seventh day but may appear a day or so earlier or later. In some cases, about the third or fourth day, the temperature drops suddenly to nearly normal but quickly rises again. This is known as a **false crisis** and can usually be distinguished by the fact that the pulse and respiration rates do not return to normal. In the absence of complications the temperature rarely rises above normal after the crisis.

The *complications* which may occur are failure of the heart, acute pleurisy and empyema, abscess of the lung and meningitis. Young children, people of advanced years and chronic alcoholics stand pneumonia badly.

*Treatment.*—Suitable and sufficient nourishment ; copious quantities of fluids to drink ; rest, physical and mental ; and a constant and plentiful supply of fresh air are essential in the treatment of pneumonia. In this disease good nursing is more valuable than medicine, and it is the nurse's duty to do all in her power, under medical direction, to maintain the strength of the patient.

When the pneumonia is confined to one lung, the patient should be encouraged to lie on that side so as to enable the healthy lung to carry on more freely the increased work thrown upon it.

If the doctor orders the wearing of a " pneumonia jacket " or the application of fomentations, poultices or ice bags for the relief of pain, the nurse must see that such applications are as light in weight as is consistent with carrying out the doctor's instructions. The patient's clothing should be cut or altered so as to enable the nurse to have access to the chest without moving the patient unnecessarily.

During the acute stage the diet consists of liquids only, milk alone for the first few days and, later, meat broths, egg-flips, etc. The important point is to maintain the patient's strength and to avoid distension of the stomach. It is therefore necessary to feed the patient in small quantities at regular intervals, about five ounces every two hours. Insomnia often proves to be one of the most stubborn and difficult symptoms, and every effort must be made to induce sleep. If pain be the cause, or if there is cyanosis, indicating an overworked heart, the doctor should be immediately informed, as relief of these symptoms may give the patient rest. Tepid sponging when the temperature is high is often sufficient to soothe the patient and give him a few hours sleep.

The nurse must be constantly on the watch for any sign of failure of the heart. The main indications of this are



increased rate, irregularity or loss of force of the pulse, coldness of face and limbs, or actual cyanosis. For this condition alcohol is usually prescribed in the form of brandy. Strychnine, ether and sal volatile should be at hand in case of emergency. If not required at any other time some form of stimulant is usually necessary during the crisis, which is often accompanied by severe prostration.

The following *important points in the nursing* of a case of pneumonia must be remembered :—

- (1) Absolute rest is essential. No exertion of any kind must be permitted before the crisis. Adequate assistance must be available when giving bedpan, making bed etc. Even talking must be discouraged.
- (2) Records—Pulse and respiration rates and temperature must be taken four-hourly and charted.
- (3) Heart failure—Constant watch must be kept for early symptoms of this condition. Stimulants must always be at hand.
- (4) Crisis—Hot bottles, dry blankets, change of clothing, etc., must be in readiness.
- (5) Danger signs—Increase in respiration rate with cyanosis, or cyanosis alone; rapid, thready, irregular pulse; persistent diarrhoea; “prune juice” sputum; delirium or coma.

In cases with a favourable termination, convalescence is usually rapid, and there are no special nursing requirements.

(b) **Broncho-pneumonia.**

This is also an inflammatory condition of the lungs, but differs from lobar pneumonia in that numerous small and scattered areas of consolidation occur in both lungs, and bronchitis is also present.

This disease is often a complication of bronchitis or the infectious fevers, especially measles and whooping cough in children. It may also appear as a primary disease and, in such cases, it resembles lobar pneumonia in its onset and course. When it arises as a complication of other diseases, the



onset is usually slower. Pyrexia appears, varying from  $100^{\circ}$  to  $104^{\circ}\text{F.}$ , and there is painful cough, breathlessness and abundant muco-purulent sputum. Both the pulse and respiration rates are increased, but the pulse-respiration ratio is not so markedly altered as in lobar pneumonia. It is common to find fresh patches of consolidation appearing in the lungs from time to time and, as a result, the illness may last a month or longer. The disease is especially dangerous in children, particularly when it follows one of the infectious fevers. The dangers and complications are similar to those described under lobar pneumonia.

## CHAPTER XXVIII.

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### **DISEASES AND DISORDERS OF THE ALIMENTARY SYSTEM.**

SYMPTOMS AND SIGNS—DYSPEPSIA—DIARRHOEA—CONSTIPATION — JAUNDICE — INTESTINAL OBSTRUCTION — PERITONITIS—APPENDICITIS—HERNIA.

Disorders of the digestive system are very common. Some slight indiscretion in diet may be sufficient to produce mild symptoms of indigestion in normal individuals, a condition recognised by themselves, and one usually relieved by the use of some simple remedy. Amongst mental patients, however, mild digestive derangements are often unnoticed by the patients themselves and may lead to more serious trouble, unless some supervision is exercised by the nurse. In addition, alimentary disturbances are common in patients suffering from certain types of mental disease, e.g., in melancholic cases, from diminution in the secretion of digestive juices, and in general paralytics and excited, restless patients, as a result of faulty habits in eating. The diet in mental hospitals is based on scientific principles and is an adequate and suitably mixed one for healthy individuals living the life of hospital inmates. Sometimes, because of his mental condition, a patient will refuse certain articles of diet persistently to the detriment of his health. It is therefore necessary for the nurse to see that each patient eats regularly a sufficient quantity of all that is provided. The nurse should also observe any change in patients' appetites, as this is often an indication of some alimentary disorder. Patients should be trained, if possible, to have a daily evacuation of the bowels and, in cases where the patient's statement cannot be relied upon, the nurse herself should see the motion.

## GENERAL SYMPTOMS AND SIGNS.

The principal symptoms associated with diseases of the alimentary system are :—

- (1) Abnormal appearance of tongue.
- (2) Dyspepsia.
- (3) Flatulence.
- (4) Pain.
- (5) Nausea and Vomiting.
- (6) Diarrhoea.
- (7) Constipation.
- (8) Melaena.

### (1) The Tongue.

In cases of dyspepsia the tongue is often coated with a white fur and is sometimes large and flabby with marks or indentations on its edges from the pressure of the teeth.

The breath may be offensive in some cases of digestive disorder or as a result of decay of the teeth. A faecal odour is present in cases of intestinal obstruction.

### (2) Dyspepsia or Indigestion.

This term is applied to a group of symptoms which may be caused by—

- (a) Too large a meal, or some error in diet such as too much of some particularly indigestible food.
- (b) Excess or deficiency of the digestive juices in the stomach.

The chief symptoms in this condition are known to everyone as a result of painful experience and need be described only briefly. The first sign noticed is usually a heavy, leaden sensation in the region of the stomach, sometimes accompanied by a feeling of distension and tenderness on pressure, followed by nausea. Sometimes partial relief is obtained by vomiting undigested food. The tongue becomes coated, and there is a general feeling of discomfort with palpitation, flushing of the face, headache and mild depression. When due to congestion or inflammation of the lining membrane of the stomach (gastritis), these symptoms are more severe.



### (3) **Flatulence.**

By flatulence is meant the accumulation of gas in the stomach or bowel. The formation of gas is usually the result of decomposition of imperfectly digested food and is accompanied by a feeling of distension.

### (4) **Pain.**

Pain is an important symptom and the nurse must take special care to obtain accurate information on the following points :—

- (i) **Site.**—Usually the pain is felt in the epigastrium or just behind the lower end of the sternum, or it may appear in the back. Sometimes, as in ulcer, it is localised in one particular spot of limited area, which is tender to the touch.
- (ii) **Time of appearance in relation to taking food.**—Pain may come on immediately food is swallowed, or after the lapse of an hour or two ; it may be relieved by vomiting, or by the taking of food.
- (iii) **Character and intensity of pain.**—The pain may be slight, of the nature of a dull heavy feeling, or acute, burning or griping.

In **gastritis** and **gastric ulcer**, severe pain follows immediately after the taking of food, and is relieved by vomiting. In **duodenal ulcer**, the pain is most severe some time after a meal, and is known as “hunger pain” ; it is relieved by taking food.

When the pain is due to some disorder of the intestinal canal, it is usually accompanied by spasmodic griping. **Intestinal colic** is due to irregular and frequent contraction of the bowel and causes acute griping pain ; in severe cases, it is accompanied by evidence of great prostration. It may be the result of some dietary indiscretion, flatulence or constipation. In such cases, the application of a hot-waterbag to the abdomen will give temporary relief. Acute abdominal pain, however, is so often a sign of some serious condition that it must always be regarded with suspicion, especially if it is

of sudden onset, and if the pulse rate is increased to 90 or more. Pyrexia or even collapse may be present, but severe pain and a pulse rate of over 90 are by themselves of sufficient importance to necessitate an immediate report to the doctor. In such cases, the only treatment permissible before medical advice is obtained is the local application of heat.

#### (5) **Nausea and Vomiting.**

By nausea is meant a feeling of sickness which may or may not be followed by the expulsion of the contents of the stomach in the act of vomiting.

Vomiting is a common symptom in alimentary diseases. It results from irritation of the stomach caused by an error of diet, or by some poison, or may be a sign of some disease of the stomach such as inflammation, cancer or ulcer. It is a constant symptom in obstruction of the alimentary canal. The vomiting in cases of digestive disorder is usually preceded by pain and nausea, and has some relationship to the swallowing of food or poison.

Vomiting may also occur as a symptom of disease of the nervous system. In this case, the vomiting is not related to the taking of food, and is not preceded or accompanied by nausea.

In every case of vomiting, the nurse will be expected to report on its relationship, if any, to the taking of food, and on the quantity and character of the material vomited. It may contain undigested or partly digested food. The odour or appearance may indicate the presence of some poison such as lysol, or there may be present some foreign body swallowed accidentally, or possibly an intestinal parasite, usually a round worm. Vomit containing bile is yellowish or greenish in colour. Faecal vomit which occurs in acute obstruction of the bowel, is of a similar colour but has a distinctive odour.

Blood in the vomit, or **haematemesis**, is a grave symptom. If the bleeding is profuse as a result of a ruptured blood vessel, vomiting occurs soon and the vomit has the appearance of pure blood mixed with food particles. If the blood is retained

for some time in the stomach before being vomited, it becomes dark in colour, like coffee grounds, from its contact with the gastric juice. This characteristic appearance of the vomit is commonly seen in cases of gastric ulcer and cancer of the stomach.

When doubt exists as to the cause of vomiting, the vomited matter must be kept for examination by the doctor. This is specially important in cases of suspected poisoning.

#### (6) **Diarrhoea.**

Diarrhoea is the term used to denote the frequent passing of watery motions, and results from the efforts of the bowel to get rid of some irritant material, such as undigested or contaminated food, or strong purgatives. Diarrhoea may occur in patients actually suffering from constipation, as a result of the irritant effect of the lumps of hardened faeces within the bowel. Diseased conditions of the bowel itself are also frequent causes of diarrhoea, e.g., typhoid fever and dysentery.

Accompanying the frequent loose motions there is usually a considerable amount of pain of a colicky nature and, in dysentery, a straining at stool without the passing of much faecal material, a symptom known as **tenesmus**.

The treatment depends entirely upon the cause and is dealt with under the various diseases of which diarrhoea is a symptom.

#### (7) **Constipation.**

By constipation is meant the incomplete and inefficient evacuation of the bowel. This is a common symptom amongst the mentally disordered, particularly in cases of depression.

The main causes of constipation are unsuitable diet, lack of exercise, changes or deficiencies in the digestive juices, and diminished peristaltic action of the bowel. Peritonitis or any obstruction to the passage of faeces in the bowel may cause partial or complete constipation.



The main symptoms of constipation are headache, furred tongue, indigestion, a feeling of depression, diminished energy and loss of appetite. Sometimes there may be a slight degree of pyrexia. General symptoms of toxaemia may result from auto-intoxication, i.e., the absorption of poisons or toxins, from the faecal material retained in the bowel. Occasional attacks of diarrhoea may appear in a patient actually suffering from constipation. Neglect of the regular daily call for evacuation of the bowel is a frequent cause of constipation. This fact is specially important in the nursing of mental patients, and the nurse must therefore endeavour to train patients to evacuate the bowels at a fixed hour daily. The proper performance of this function is greatly helped by adequate exercise and, when this cannot be obtained owing to confinement to bed or for some other reason, assistance may be required in the form of laxatives or purgatives.

#### (8) **Melaena.**

This is a condition in which the motions have a dark appearance, like tar. It is a symptom of bleeding from the higher part of the alimentary tract, the blood being changed by the digestive secretions in its passage along the intestine.

Bright red blood in the stools is an indication of bleeding near the lower end of the bowel, usually from haemorrhoids.

### **SOME COMMON DISEASES OF THE ALIMENTARY SYSTEM.**

#### **Jaundice.**

This is the name given to a group of symptoms caused by the presence of bile pigment in the blood, as a result of which the skin and mucous membranes become greenish yellow in colour. The condition is usually first noticed in the white of the eye which becomes yellow. Eventually the skin all over the body may become similarly stained. Bile pigment is present in the urine which, in severe cases, may be of a dark brown colour. The stools are typical; because of the absence of the pigment they are whitish in colour, resembling clay, and they also have a very offensive odour.

The pulse rate is usually slow and may be as low as 40 per minute. Various gastric disturbances may be present, and itching of the skin is often a prominent feature. There is always a feeling of mild depression, and acute mental disturbances may occur in severe cases.

Jaundice is usually caused by obstruction of the bile duct preventing the normal flow of bile to the intestinal canal, for example, by duodenal catarrh or gall stones or by a tumour pressing on the duct. The retained bile is absorbed by the blood and lymph. Jaundice may also occur in some infectious fevers as a result of some abnormal condition of the blood.

### Intestinal Obstruction.

This is a serious and urgent condition in which there is a stoppage of the passage of the contents of the bowel along the intestinal canal.

#### *Symptoms.*—

- (i) Sudden, severe abdominal pain, at first “colicky” but later almost continuous.
- (ii) Complete constipation, not even flatus being passed. An enema will clear the bowel of faeces up to the site of obstruction and a second enema will be returned without faeces.
- (iii) Vomiting, which may become faecal in character.
- (iv) Distention of the abdomen, which may become “as tight as a drum”.
- (v) Considerable prostration and a tendency to collapse with rapid, feeble and thready pulse.
- (vi) Subnormal temperature.

Of the many causes of intestinal obstruction, perhaps the commonest are strangulation of a hernia and blockage of the bowel by malignant disease (cancer). The condition requires operative treatment. A purgative must *never* be given.

### **Peritonitis.**

This term means inflammation of the peritoneum, the membrane which lines the abdominal cavity and also covers the organs contained therein.

The condition is due to infection of the peritoneum by germs which obtain entrance to the peritoneal cavity from a diseased or perforated abdominal organ, or through a wound in the abdominal wall.

General peritonitis is always extremely serious and usually fatal unless immediate operative measures are adopted.

*Symptoms.*—The main symptom is that of intense abdominal pain. The face is pinched and drawn and the expression anxious, and the patient looks extremely ill. He lies on his back with knees drawn up, a position which tends to relieve the tension of the abdominal wall. The abdomen is tense and distended, and feels hard and boardlike to the examiner's hand. The temperature is usually high but may be only slightly raised. Respiratory movements are confined to the chest, and usually there is persistent vomiting.

*Treatment.*—The condition requires immediate treatment by surgical operation. The nursing treatment is similar to that following any abdominal operation. Before an operation has been decided upon, the patient must on no account be given morphia or opium to ease the pain, as the action of the drug may mask the symptoms on which the diagnosis depends, and thus make it difficult for the doctor to determine accurately the extent and seriousness of the condition.

### **Appendicitis.**

Appendicitis is inflammation of the appendix and of the peritoneum surrounding it. The condition varies in severity; it may be merely a mild inflammation or may proceed to abscess formation or gangrene of the appendix. Should such an abscess rupture, there is serious risk of death from general peritonitis.



The actual cause of the condition is not clear, but chronic constipation may be a predisposing cause.

*Symptoms.*—In uncomplicated cases the symptoms are sudden abdominal pain which, after a few hours, becomes more intense in the right iliac region, i.e., over the appendix ; marked tenderness in that area, the patient often being found lying with right leg drawn up ; moderate pyrexia with increased pulse rate ; nausea, constipation and vomiting.

*Treatment.*—Rest in bed is essential. Food should be withheld, and the bowel should not be disturbed by a purgative. In mild cases the attack usually subsides in a few days. If the pain is severe it may be relieved by fomentations or an ice bag, and the abdomen may be protected from pressure by a cradle. If the acute symptoms do not subside in from twenty-four to forty-eight hours and the temperature and pulse rate do not return to normal, the probabilities are that there is abscess formation, in which case an immediate operation is necessary. Perforation of an abscess of the appendix presents a series of alarming symptoms. At first there is very acute abdominal pain and tenderness with persistent vomiting ; later, symptoms of general peritonitis appear with signs of collapse. The patient's chances of life depend on the promptness of relief by a surgical operation. Failing this, death supervenes within a day or two.

### **Hernia.**

Hernia means the protrusion of an organ, or part of an organ, through an accidental opening in the wall of the cavity in which it is situated. Thus there may be a hernia of the brain through a wound in the skull, or a hernia of the lung through the chest wall. These forms are somewhat rare, and the name is usually applied to a hernia of the bowel, popularly called "rupture".

This variety of hernia occurs most commonly in the region of the groin (inguinal hernia and femoral hernia) and at the umbilicus (umbilical hernia). At these points the abdominal wall is weak and, under the strain of exertion, may give way and allow a portion of intestine to pass through.

*Symptoms.*—At first there is a small round swelling which bulges when the patient coughs and may disappear when he lies down. There may be no other symptoms, except a feeling of weakness or slight pain at the site of the hernia and a dragging sensation in the back.

The hernia may become nipped and held by the margin of the opening through which it has come, resulting in a stoppage of its circulation. This condition is known as **strangulation**, and is characterised by acute pain in the part, restlessness and signs of obstruction of the bowel with absolute constipation and vomiting, which often becomes faecal after a time. When strangulation occurs, immediate surgical treatment is usually necessary in order to save the patient's life.

*Treatment.*—The appearance of a swelling in the region of the groin must be promptly reported. Patients known to be suffering from hernia should not be allowed to do manual work requiring considerable muscular effort. When a truss is worn, it should be applied in the morning before the patient rises and left in place until he has returned to bed at night. Constipation must be guarded against, to avoid unnecessary straining at stool.

If abdominal pain, accompanied by constipation and vomiting, occurs in a patient with hernia, strangulation should be suspected and the doctor informed immediately. A purgative must *never* be given to a patient suffering from strangulated hernia.

## CHAPTER XXIX.

### DISEASES OF URINARY SYSTEM.

SYMPTOMS AND SIGNS—SUPPRESSION AND RETENTION OF URINE—URAEMIA—NEPHRITIS—CYSTITIS.

#### SYMPTOMS AND SIGNS.

Diseases of the urinary system are manifested by (a) Abnormalities in the urine. (b) General bodily symptoms.

##### (a) **Abnormalities in the Urine.**

Every trained nurse must be able to make accurate observations of the general physical character of urine, and to carry out the common routine tests for the presence of abnormal constituents.

Urinary changes will be discussed under the following headings :—

- (i) Appearance.
- (ii) Quantity.
- (iii) Specific Gravity.
- (iv) Reaction.
- (v) Abnormal Constituents.

##### (i) **Appearance.**

Normal urine is pale yellow in colour and transparent when passed. In health there is seldom any deposit except mucus in small quantities and, occasionally, urates which may appear after prolonged or strenuous exercise.

The colour of the urine may be altered in disease. In jaundice it has a typical yellowish green colour, and the urine becomes frothy when shaken. When blood is present in small quantities, the urine has what is described as a “smoky” appearance. When larger quantities of blood are present the urine may be red in colour. In diseases in which the quantity of urine is much increased, the colour is usually much lighter



or paler than normal. The administration of certain drugs may alter the colour, e.g., carbolic acid gives it a deep green or almost black appearance, and a dark coloured urine may result from the prolonged administration of sulphonal.

**Deposits.**—**Mucus** in small quantities occurs in health, but large quantities indicate that there is probably an inflammatory condition of the bladder. In such cases, **pus** may also be present in the form of a creamy white deposit at the bottom of the test glass.

A brick red deposit of **urates** is often observed when the amount of urine passed is small in quantity, as in fevers; they disappear when the urine is heated, and their presence is of little importance.

**Phosphates** may appear as a whitish deposit in alkaline urine. They do not disappear when the urine is boiled, but readily dissolve on the addition of a little acid. As a rule, they have no special significance.

## (ii) **Quantity.**

The average quantity of urine passed in twenty-four hours is about fifty ounces, but this amount may vary very considerably in health, depending largely on the quantity of liquid taken and the activity of the other organs of excretion. For example, when the air temperature is high, less urine is secreted, as the body loses more liquid through the sweat glands. The daily quantity of urine passed is much increased in diabetes and some forms of chronic kidney disease. The amount is decreased in acute kidney disease, in fevers, and in disease accompanied by diarrhoea or profuse perspiration, as fluid is excreted in such cases by the bowel or the skin. In certain serious general diseases and acute disease of the kidneys themselves, the secretion of urine may cease. This is known as **suppression of urine**; it is an extremely grave symptom, and unless relieved by appropriate treatment soon terminates in death. Suppression of urine must be distinguished from **retention of urine**, a condition in which urine accumulates in the bladder until this organ becomes overdistended. In both

conditions no urine is passed by the patient. In suppression, this is because no urine is secreted by the kidneys whereas, in retention, the kidneys continue to function, but the patient is unable to pass water. In some cases of retention, no urine whatever is passed ; in others, there may be dribbling from the urethra as a result of the pressure in the overdistended bladder.

(iii) **Specific Gravity.**

The use of the urinometer is described elsewhere. It is here sufficient to say that the normal specific gravity varies from 1010 to 1025. Readings below 1010 are found when large quantities of urine are passed, as in chronic kidney disease and in one form of diabetes (diabetes insipidus). A high specific gravity, over 1030, with the passing of large quantities of urine, is found in another form of diabetes (diabetes mellitus).

(iv) **Reaction.**

In health urine should give an acid reaction. The persistent passing of alkaline urine should be reported.

(v) **Abnormal Constituents.**

The usual tests for the presence of abnormal constituents are described elsewhere.

**Albumin :** (Albuminuria). Only occasionally present in health, and usually indicates kidney or heart disease.

**Sugar :** (Glycosuria). The chief cause of the constant appearance of sugar in urine is diabetes.

**Blood :** (Haematuria). Blood is present in acute nephritis, and may be found in other acute conditions of the urinary tract.

**Bile :** Usually present in jaundice.

**Pus :** (Pyuria). Commonly indicates inflammation of bladder and may be present in some diseases of the kidneys.

(b) **General Bodily Symptoms.**

Disease of the cardio-vascular system often accompanies kidney disease. High blood pressure, with some thickening of arterial walls and enlargement of the heart, is common. Sufferers from kidney disease sometimes complain of impairment of vision, resulting from changes in the retina (retinitis). In certain forms the skin, particularly that of the face, develops a peculiar pallor sometimes described as "waxy".

**Dropsy**, or oedema, is a frequent symptom, and consists of an accumulation of fluid under the skin over the body generally. Its appearance is usually first noticed in the eyelids which become swollen and puffy, particularly in the morning. When dropsy of the legs is present, it is not much affected by rest in bed. This distinguishes dropsy with kidney disease (renal dropsy) from that associated with heart disease (cardiac dropsy). In the latter, any oedema of the ankles and feet tends to disappear after a night's rest, and to reappear in the evening.

Further information on the different varieties of dropsy will be found in the chapter on diseases of the circulatory system.

**Uraemia** is the term used to describe a group of symptoms due to the accumulation of toxic products in the body. The condition may arise in any form of kidney disease and frequently ends in the death of the patient.

In patients known to be suffering from kidney disease, indications of the onset of this condition can sometimes be observed and an attack prevented by suitable treatment. Such symptoms are restlessness, insomnia, persistent headache, feeling of lassitude and attacks of dyspnoea with or without exertion. In many cases, however, the condition comes on very suddenly, commencing with severe headache and vomiting, rapidly followed by the appearance of convulsions or delirium; the patient becomes unconscious and coma and death frequently follow.



**DISEASES OF THE URINARY SYSTEM.****Acute Nephritis.**

Acute nephritis, or **acute Bright's disease**, is an acute inflammation of the kidney. It is a common complication of scarlet fever and also occurs during the course of other fevers or follows exposure to cold.

*Symptoms.*—The earliest observable symptom is usually a “puffiness” under the eyes soon followed by dropsy elsewhere in the body. In severe cases there may be oedema of the lungs and effusion of fluid in the pleural and pericardial cavities. The urine is diminished in quantity, or may be entirely absent (suppression of urine); albumin is present in large quantities and the urine contains blood. General symptoms are also present, of which the most prominent are usually pain in the back, headache, loss of appetite and constipation. Moderate pyrexia is the rule and the pulse is usually rapid and the blood pressure raised.

The condition is always a serious one: the main danger to be guarded against is suppression of urine and the onset of uraemia.

*Treatment.*—The inflammatory condition of the kidneys lessens their capacity for work and, therefore, the secretion of waste matter must as far as possible be carried on by the other excretory organs. Increased sweating must be promoted by baths of various types or wet packs and by the use of certain drugs. Elimination of waste fluids is assisted by keeping the bowels freely open. The kidneys are thus given as little work as possible, but nevertheless it is desirable that they be flushed out with non-irritating fluids, and the patient must, therefore, be encouraged to take a plentiful supply of bland liquids such as milk, barley water or lemon drinks.

Because of the free sweating and consequent danger of chill, the patient should be kept in bed between blankets (not sheets) during the acute stage of the illness.

### Cystitis.

Cystitis, or inflammation of the bladder, is caused by a microbic infection. It may follow obstruction to the passage of urine in cases of enlarged prostate gland or occur as a complication of one of the acute fevers, such as typhoid. The passing of a dirty catheter may be followed by infection of the bladder.

In South Africa, a chronic form of cystitis is caused by **bilharzia**, a small worm-like parasite which lives in the blood vessels of the bladder wall.

*Symptoms.*—Pain over the region of the bladder, and frequent and painful passing of urine. The urine is cloudy, with a copious whitish deposit of mucus and pus. In bilharzia, the urine may be red in colour from the presence of blood. In acute cases there may be rigors and high fever.

*Treatment.*—Rest in bed, and hot fomentations over the region of the bladder and between the legs, may afford relief. Various drugs are administered to disinfect the urine and to render it bland and soothe the local irritation. Washing out of the bladder with weak antiseptic lotion is frequently employed in severe infections.

### Stricture of the Urethra.

This is a narrowing of the urethral passage, which may obstruct the free passage of urine. It may result from injury, or inflammation from infection by micro-organisms, usually the gonococcus.

### Retention of Urine.

This is a condition in which the urine is retained and accumulates in the bladder. It may be caused by obstruction to the passage of urine from stricture of the urethra or enlargement of the prostate gland. It also occurs in certain diseases of the central nervous system, such as general paralysis.

In some cases of retention, no urine whatever is passed ; in others, there may be dribbling from the urethra as a result of the pressure in the overdistended bladder.

*Treatment.*—The condition may be relieved by placing the patient in a warm bath, but a catheter may have to be passed in order to draw off the urine.



## CHAPTER XXX.

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### **DISEASES OF THE REPRODUCTIVE SYSTEM.**

HYDROCELE—VARICOCELE—DISORDERS OF MENSTRUATION—  
UTERINE DISPLACEMENTS.

#### **Hydrocele.**

This is the name given to the accumulation of serous fluid in the sac which encloses the testicle and spermatic cord. The condition may be congenital or due to inflammatory conditions of the testicle or cord. The patient complains of a swelling in one side of the scrotum. It is sometimes possible to feel the testicle behind the sac containing the fluid. Frequently the swelling causes no trouble, but in some cases its weight produces a dragging pain which is relieved by the use of a suspensory bandage. Relief can also be given by drawing off the fluid, or the condition can be completely cured by surgical operation.

#### **Enlarged Prostate.**

The prostate gland, situated at the neck of the bladder may become enlarged in old men and cause retention of urine. The condition may necessitate the regular use of a catheter to empty the bladder, or it may be cured by removal of the gland by surgical operation.

#### **Varicocele.**

This is the name applied to a varicose condition of the veins of the spermatic cord in the scrotum. The condition appears during adolescence and is often unnoticed by the patient, but may produce a dragging pain. It is usually found on the left side, and the mass of dilated veins can be felt and sometimes seen through the skin of the scrotum. The testicle on the affected side hangs at a lower level than the other.

The condition tends to disappear as the patient becomes older, but temporary discomfort can be relieved by the use of a suspensory bandage. In severe cases, surgical measures may be necessary for the removal of the dilated veins.

### Menstruation and its Disorders.

Menstruation is the term applied to a periodic discharge of blood from the uterus of the human female. The length of interval varies in different women, the commonest being twenty-eight days, but intervals from twenty-one to thirty days are common enough to be regarded as normal. The average duration of menstrual flow is about four days, but anything from two to eight days need not be regarded as abnormal. The quantity of blood lost during each menstrual period varies from four to ten ounces.

There is considerable variation in the symptoms experienced by different individuals just before and during the menstrual flow. Generally speaking there is a feeling of malaise, a sense of fullness in the pelvis, and backache.

Menstruation usually commences about the age of thirteen to fifteen years and ceases from forty-five to fifty. Wide variations are frequently observed. The time of cessation of menstruation is known as the **menopause**, or **climacteric**.

The main concern of the nurse must be to ascertain what the normal menstrual habits of her patient are and to report any change which occurs.

Certain terms are used to describe various abnormalities in the menstrual function :—

- (a) **Amenorrhoea** means absence of menstrual flow. This occurs during pregnancy and the period of lactation. Cessation or great irregularity of menstrual periods is common in cases of acute mental disorder, and is also one of the symptoms of anaemia.
- (b) **Menorrhagia** means excessive flow of blood during the menstrual period.
- (c) **Metrorrhagia** means loss of blood from the uterus between periods; this symptom appears towards middle life, and may indicate a serious uterine condition.
- (d) **Dysmenorrhoea** means painful menstruation.

Any sign of a discharge after the menopause should be brought to the medical officer's notice, as such a discharge is sometimes an indication of cancer of the uterus. As a general rule, any vaginal discharge other than the menstrual flow can be regarded as abnormal.

The subject of discharges in connection with venereal disease in both male and female are dealt with elsewhere in the description of these diseases.

### **Displacements of the Uterus.**

The uterus is suspended in the centre of the pelvis by ligaments. If the ligaments become stretched, or if the muscular floor of the pelvis is damaged by strain or childbirth, the uterus may be bent, the whole organ may be tilted forwards or backwards, or it may pass downwards between the bladder and rectum. Downward displacement is called **prolapse** and, in severe cases, the uterus may protrude from the vagina. The various displacements are treated by suitable forms of vaginal pessary or by operation.

**Endometritis** is the term used to denote inflammation of the mucous membrane of the uterus.

**Tumours**, either simple, such as fibroids, or malignant, such as cancer, may develop in the uterus.

**Leucorrhoea** is the term applied to a discharge from the vagina which may occur in various conditions. The discharge may be opaque and white or yellow, or it may consist of clear mucus. It may be a sign of disease of the uterus, such as endometritis, irritation of the vagina by thread worms or by a foreign body, or of inflammation due to bacterial infection, sometimes gonococcal. The treatment is both general and local, the latter consisting chiefly of the administration of antiseptic vaginal douches.



## CHAPTER XXXI.

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### DISEASES OF THE NERVOUS SYSTEM.

GENERAL SYMPTOMS AND SIGNS—MENINGITIS—ENCEPHALITIS  
—TUMOURS OF BRAIN—APOPLEXY—EPILEPSY—CHOREA  
—MULTIPLE SCLEROSIS—POLIOMYELITIS—LOCOMOTOR  
ATAXIA—GENERAL PARALYSIS—NEURITIS—EXAMINATION  
OF NERVOUS SYSTEM.

#### GENERAL SYMPTOMS AND SIGNS.

The chief symptoms of diseases of the nervous system may be classified under the following heads :—

- (1) Pain.
- (2) Sensory symptoms.
- (3) Disorders of movement.
- (4) Anomalies of reflex action.
- (5) Impairment of nutrition.
- (6) Unconsciousness and coma.

#### (1) Pain.

Pain is a common accompaniment of disease. It occurs in general conditions such as fever and toxaemia, and is a frequent symptom of diseases of various organs. In many diseases of the nervous system it is a prominent feature.

**Headache** is one of the cardinal signs of brain tumour and is often intense in cerebral meningitis. **Migraine** is a special variety of headache which occurs in paroxysms at intervals of variable duration and is usually associated with vomiting and disorders of vision.

**Neuralgia** is the term applied to nerve pains for which no obvious organic cause can be found. **Trigeminal neuralgia** is a form in which there is severe, often agonising, pain in the regions supplied by the branches of the fifth cranial nerve.

Sudden shooting pains of short duration, called **lightning pains**, are one of the symptoms of locomotor ataxia (tabes dorsalis); they are most frequent in the lower limbs. **Girdle pains**, in which there is a sensation of a narrow constricting band round the waist or trunk, also occur in tabes and in diseases in which the nerve roots are compressed. **Neuritis**, an inflammatory condition of a nerve or nerves, may cause severe pain and is one of the causes of **sciatica**, in which pain is felt in the lower limb along the course of the sciatic nerve. In general or multiple neuritis, there is sometimes acute pain associated with tenderness of the muscles.

The pain associated with diseases of internal organs is sometimes felt in the skin or other parts of the body apparently not connected with the site of the disease. Thus, in hip disease, pain may be felt in the knee and, in spinal disease, the pain caused by pressure on the nerve roots may be felt on the sides and front of the body in places where the nerves from these roots end. These pains are called **referred pains**. When painful sensations reach the central nervous system from organs not usually painful, the sensation may be reflected or referred to some other region whose sensory nerves enter the same part of the spinal cord as those coming from the diseased organ.

## (2) **Sensory Symptoms.**

The various cutaneous sensations, viz., touch, pain, temperature and pressure, may be affected in diseases of the nervous system either separately or together and in varying degrees.

In testing a patient's sensation his eyes should be closed or bandaged, or a screen may be held between his eyes and the part of his body which is being examined. The patient is told to say when he is touched or to point to the spot touched with his finger. **Tactile sensation** is tested by means of a soft object such as a piece of cotton wool or a feather, **pressure** by a blunt article such as the point of a pencil, **pain** by pricking with a pin, and **temperature** by placing test tubes filled with

hot or cold water in contact with the skin. The extent of the area in which sensation is lost or impaired can be defined and mapped out.

Sensibility to touch may be altered in various ways. Normally one can feel and localise even the lightest touch of a feather on the skin. In some diseases tactile sensibility may be diminished or entirely abolished. This loss of sensation, or **anaesthesia**, may occur in organic disease involving the sensory nerves, such as multiple neuritis, or the afferent tracts in the cord, such as tabes, and also with lesions involving the optic thalami or the cortex of the brain. Anaesthesia is also a common symptom in hysteria in which it is often extensive and complete. This disease is a functional one; the areas in which sensation is lost do not correspond with the anatomical distribution of the nerve supply and, in this respect, hysterical anaesthesia differs from that due to organic disease.

If the whole of one side of the body is insensitive the condition is called **hemi-anaesthesia**; in **para-anaesthesia** both arms and both legs are involved.

**Hyperaesthesia** is a condition in which the skin is excessively sensitive and the slightest touch may evoke pain or even spasm. Hyperaesthesia is seen most frequently in hysteria but it also occurs in neuralgia, in tabes, in diseases such as spinal tumours causing compression of nerve roots, or when nerves are irritated or inflamed, such as in herpes zoster (shingles) and multiple neuritis.

**Paraesthesia**, or perversion of sensation, is the term applied to a condition in which an ordinary stimulus causes an extraordinary sensation, e.g., there may be a sensation of tingling when the skin is touched, or severe pain may be felt when cold is applied. The term is also used to denote tingling and other sensations which occur without any external stimulus.

**Analgesia**, or loss of sensibility to pain, may occur in tabes, lesions of the spinal cord and in leprosy. It is also frequently seen in hysteria.



**Sensibility to temperature** is impaired in some rare diseases of the central nervous system, such as syringo-myelia, and in other conditions, such as leprosy, in which the peripheral nerves are affected.

Lesions of the sensory cranial nerves may produce losses of sensation corresponding to the function of the nerve affected, e.g., there is loss of the sense of smell with disease of the first nerve, impairment of vision when the second is involved, and defective hearing in the case of the eighth.

**Joint sensation** may be tested by passively moving one of the patient's limbs into certain positions, his eyes being closed, and then telling him to place his other limb in the same position.

**Deep sensibility**, such as that of the muscles, may be tested by applying pressure. In some diseases this form of sensation is altered and severe pain may be caused by compressing the muscles by grasping them with the hand.

### (3) **Disorders of Movement.**

Motor signs of disease of the nervous system occur chiefly in the form of paralysis, inco-ordination and various involuntary movements.

**Paralysis.**—This means loss of power of muscular contraction and of movement. It may be caused by disease or injury of the brain, spinal cord or peripheral nerves, and it may also occur as a symptom of functional disorder, such as hysteria, and primary disease of the muscle itself. The term paralysis implies complete loss of voluntary motor power; **paresis** is the term used to denote slighter degrees of impairment, or incomplete paralysis.

The extent of the paralysis and its distribution vary. It may involve the whole body or only a part of it. **Hemiplegia** means a condition in which the face, arm and leg on the same side are paralysed; it is often the result of a lesion on the opposite side of the brain, such as a cerebral haemorrhage. **Paraplegia** is the term applied to paralysis of the lower part

of the body including both lower limbs ; it is usually accompanied by paralysis of the bladder and rectum and is often the result of injury or disease of the spinal cord. **Monoplegia** means paralysis of only one limb, and, in **diplegia**, the limbs on both sides of the body are involved. Diseases of motor nerves or their roots may cause paralysis of groups of muscles or of individual muscles ; this may be seen in infantile paralysis, alcoholic neuritis, lead poisoning and in lesions of the cranial motor nerves. Squint may be caused by lesions of the third, fourth and sixth cranial nerves, **ptosis**, or drooping of the upper eyelid, by paralysis of the third, and facial paralysis occurs when the seventh is affected.

In addition to the loss of power in paralysis, there are usually other associated abnormalities present in the limb, such as flaccidity or rigidity, exaggeration or loss of reflexes, and wasting of the muscles. In paralysis due to lesions of the brain or of the motor tracts in the cord there is usually rigidity or stiffness, exaggeration of reflexes, and little muscular wasting ; this form is referred to as **spastic paralysis**. If the paralysis is caused by disease of the peripheral nerves or their roots, the limb is usually flaccid or limp, the reflexes are absent, and the muscles are wasted.

Extensive paralysis is often seen in cases of hysteria, but its distribution does not correspond with anatomical and physiological facts and the condition shows signs which are often contradictory in other respects.

Galvanic and faradic electrical currents are used to test the condition of the nerves and muscles in cases of paralysis.

**Contractures** may follow paralysis ; in this condition there is shortening of the muscles and formation of fibrous tissue. This shortening cannot be overcome by passive movement, and causes deformity of the limb.

In addition to paralysis caused by disease of the nervous system, there are some cases of paralysis due to disease of the muscles themselves. These muscle diseases are rare ; they usually appear in childhood, and the affected muscles may be either wasted or enlarged.

**Inco-ordination, or Ataxia.**—This is the term used to denote a condition in which the power to regulate or co-ordinate the contractions of muscles or groups of muscles is impaired although the power of movement is retained. Almost every movement we make involves the contraction of several muscles and, unless these contractions are regulated or balanced, the movement will be unsteady and jerky. In ataxia, the patient may be unable to perform fine movements or to stand or walk steadily. In testing for the condition he may be asked to button his collar or coat, to pick up a pin from a smooth surface, to lift a full glass of water to his mouth without spilling, to touch the tip of his nose with his forefinger, or to put his heel on to his opposite knee. If ataxia is present the patient either cannot perform the movements at all or he does them in a jerky, clumsy manner.

Ataxia is seen in tabes, general paralysis, diseases of the cerebellum, chorea and cases of paralysis. It is also seen in hysteria.

In tabetic ataxia, the patient may be unable to walk along a straight line, or to turn round quickly without reeling. When told to stand erect with his feet together and to shut his eyes, he sways and would fall unless supported; this is known as **Romberg's sign**.

In cerebellar ataxia the patient has a characteristic reeling, lurching gait.

**Aphasia** is loss of the power of communicating with others by means of speech or writing. The condition is due to lesions of the parts of the brain which govern these acts. In motor aphasia, the person, although not dumb, is unable to produce the movements required for speaking or writing; in another form, sensory aphasia, he cannot comprehend what is said or written although he can hear and see.

**Apraxia** is a condition in which the person is incapable of performing familiar actions although he is not suffering from paralysis, sensory disturbance or inco-ordination. Apraxic patients may not recognise the use of common objects such as a key or knife, or, if they do, they may not know how to make use of them.



**Involuntary Movements.**—There are numerous forms of involuntary movements such as tremors, spasmodic movements, convulsions, tics, choreic movements, athetosis, etc.

**Tremors** are involuntary rhythmic or oscillating movements which occur in many diseases of the nervous system. They may be either fine or coarse and they are seen chiefly in the hands, face and tongue.

Tremors occur in states of emotional excitement, such as fear or anger, in fatigue, senility and in exophthalmic goitre. They are a common symptom in alcoholism and in poisoning by mercury, lead and tobacco. In general paralysis, there are often coarse tremors of the lips and tongue. In paralysis agitans, the tremors are coarse and chiefly affect the hands and fingers, producing the so-called pill-rolling movement; they are most obvious when the limb is at rest and diminish when a voluntary movement is made. In other conditions the tremors may appear only when the patient attempts to make a voluntary movement; this is called an **intention tremor**.

**Nystagmus** is an involuntary, rhythmic movement of the eyeball. Both eyes are usually affected and the movement consists of repeated jerks or oscillations of the eyeball from side to side, up and down, or round and round. It may be elicited by asking the patient to look to one side. It occurs in multiple sclerosis and other diseases of the brain and also in some diseases of the eye and the ear. It is also seen in persons such as miners who work in a dim light.

**Choreic movements** are non-rhythmic, irregular and jerky. They cause wriggling and grimacing.

**Athetosis** is usually seen in partially paralysed limbs. It consists of slow, irregular, twisting movements, mostly in the hands but sometimes in the feet; the fingers are alternately flexed and hyperextended and spread out, and there are movements of the wrist.

Repeated nodding movements of the head (spasmus nutans) or rolling movements, are sometimes seen in rickety children.

A **tic** is a repeated sudden involuntary movement. It is usually violent and irregular and it often takes the form of a tossing of the head, a wriggling of the shoulder, or a facial grimace. Tics are usually functional in origin.

**Fibrillary twitchings** are transient flickerings of bundles of muscle fibres; they are seen in wasted and degenerated muscles.

**Spasms** are involuntary, and sometimes painful, contractions of muscle. When a spasm is prolonged it is called a **tonic** spasm; when it consists of rapid alternating contractions and relaxations of the muscle, it is described as **clonic**. Spasms occur in cramp, strychnine poisoning, rabies and other conditions. When spasms are general and widespread over the body they may be called convulsions.

**Convulsions**, or **fits**, are widespread spasmodic muscular contractions causing irregular movements of the body and limbs. The spasms may be tonic or clonic, and the condition is often associated with unconsciousness. Convulsions occur in epilepsy, infantile convulsions, brain disease, uraemia, strychnine poisoning and tetanus. They are also one of the common symptoms of hysteria.

**Tetany** is a spasmodic condition seen in rickety children, usually occurring in attacks in which the hands and feet are in a condition of tonic spasm producing a characteristic attitude.

#### (4) **Anomalies of Reflex Action.**

The reflex arc, the part of the nervous system through which reflex action is effected, consists of a sensory nerve ending in the skin and the nerve leading from it to the spinal cord, the nerve cells in the cord and the motor nerve from the cord to its ending in a muscle. Reflex actions, however, do not depend entirely on the reflex arc, and they are modified by a controlling or regulating influence constantly exercised by the brain.

Reflex action may be divided into three groups, namely, the superficial, the deep and the organic reflexes.

**Superficial or Skin Reflexes.**—These occur as a result of stimulation of certain parts of the skin and mucous membrane. There are numerous skin reflexes and, in disease, the normal response to stimulation may be abolished or modified in various ways.

The **plantar reflex** is one of the most important in the diagnosis of organic disease of the nervous system. It consists of the flexing of the toes and certain movements of the foot which occur when the skin of the sole of the foot is stimulated by stroking it with a hard object such as a pencil. When the plantar reflex is tested, the patient should be lying down with his hips and knees flexed and the foot lying on its outer side ; the foot should also be warm. The normal flexor response occurs only when the reflex arc and the pyramidal tract in the cord, conveying motor impulses from the leg centre of the cerebral cortex, are intact. In cases where the reflex arc is damaged, no response may be obtained ; when there is a lesion of the brain or the motor tracts in the cord, the response is altered and the toes are extended and spread out instead of flexed. (**Babinski's sign**).

This abnormal response is regarded as a proof of the existence of organic disease except when it occurs in infants, in whom an extensor reflex is normal, and during epileptic seizures and other transient states.

The corneal, palatal and abdominal reflexes are also examples of skin reflexes. The **corneal reflex** is the closing of the eye when the conjunctiva is touched ; in the **palatal reflex**, the uvula is lifted when the soft palate is stimulated ; the **abdominal reflex** consists of a contraction of the muscles when the skin on one side of the abdomen is stroked.

**Deep or Tendon Reflexes.**—These are obtained by striking or tapping the tendons of certain muscles. The knee and ankle jerks are examples of deep reflexes. The **knee jerk** is elicited by sharply striking the tendon of the quadriceps extensor muscle just below the patella while the muscles of the limb are relaxed. The patient may sit on a chair with the soles of his feet flat on the floor and the knees semi-flexed, or one knee may be crossed over the other. The **ankle jerk**



is obtained by placing the patient in a kneeling position on a chair with the feet separated and projecting over its front edge. When the tendo Achillis at the back of the ankle joint is tapped, a brisk contraction of the calf muscles and an extensor jerk of the foot occurs.

Absence of the knee jerk or the ankle jerk indicates that there is some lesion or interruption in the reflex arc, and loss of these reflexes is found in diseases such as tabes, infantile paralysis and peripheral neuritis. An exaggerated knee jerk occurs when the controlling influence exercised by the brain is cut off by a lesion either in the brain or in the motor tracts in the cord. Exaggeration of the knee jerk may also occur in hysteria and other functional disorders.

In diseases where the controlling influence of the brain is impaired and the deep reflexes are exaggerated, a condition termed **clonus** may also be obtained. This consists of a series of repeated muscular contractions caused by the sudden stretching of a tendon. **Ankle clonus** is elicited by grasping the front part of the foot with one hand and flexing the ankle by suddenly pressing the sole while the knee is bent and supported at the back with the other hand. If clonus is present, repeated rhythmical jerkings of the foot occur, due to involuntary clonic contractions of the calf muscles, and continue while the tension on the tendon is maintained. Ankle clonus is often associated with an exaggerated knee jerk and an extensor plantar reflex. True ankle clonus occurs only in disease, but spurious varieties are seen in hysteria and other conditions.

**Organic or Visceral Reflexes.**—These are involuntary movements which follow the stimulation of certain organs. The bladder and rectum contract reflexly when they are stimulated by distension with urine and faeces. When the pharyngeal reflex is defective, food may pass into the larynx without exciting cough and the patient may be choked. These reflexes may be impaired in general paralysis, tabes, and other diseases, and distension of the bladder or the rectum or difficulty in swallowing may occur as a result.

The **pupillary reflex** is the contraction or diminution in size of the pupils, when the eyes are directed to a near object or when they are exposed to light after having been shaded. This is a variety of reflex action which is an important sign in the diagnosis of diseases of the nervous system. In tabes and general paralysis, the pupillary reflex may be abolished or altered in various ways. In one variety of abnormal response, called the **Argyll Robertson pupil**, the accommodation reaction is retained, i.e., the pupil contracts when the eye is focussed on a near object ; but the light reflex is lost, and the pupil fails to contract on exposure to light.

A **conditioned reflex** is a response which is elicited by a stimulus which is not the original or normal one. The sight or taking of food produces a reflex secretion of saliva and gastric juice in an animal. When, however, a bell is rung simultaneously whenever food is given to the animal, the mere ringing of the bell may ultimately cause a secretion of saliva and gastric juice. These conditioned reflexes are important in the formation of habits and the performance of automatic acts and in other forms of mental activity.

#### (5) **Impairment of Nutrition.**

The nervous system exercises a constant influence on the condition and nutrition of all the tissues of the body ; this is termed **trophic influence**. When this influence is lost as a result of disease of the central nervous system or interference with the nerve supply of the part, such as occurs in states of paralysis and anaesthesia, changes may take place in the skin and other tissues. The skin may become glossy in appearance or show localised areas of sweating, the nails become brittle, and ulcers and bedsores or gangrene are apt to develop. The muscles waste and there are sometimes degenerative changes in the bones and joints. In tabes, the knee joint may become disorganised and enlarged, a condition called **Charcot's joint**.

#### (6) **Unconsciousness and Coma.**

A state of unconsciousness or coma may occur in diseases of the nervous system in which there is interference with the functions of the brain. It is seen in cerebral concussion, apoplexy, poisoning and epilepsy.



**SOME DISEASES OF THE NERVOUS SYSTEM.****Meningitis.**

Meningitis is inflammation of the meninges, the membranes covering the brain and spinal cord. It may be either acute or chronic and it may involve only the brain (cerebral meningitis) or the spinal cord (spinal meningitis), or the meninges of both the brain and cord may be affected. One form of this disease is due to infection with a specific organism ; other forms are caused by the spread of infection from the skull or adjacent parts, and some develop as a complication of septicaemia, pneumonia and other infectious states.

Different forms of meningitis are described, the distinction between them being made chiefly in respect of the variety of micro-organism responsible for the disease.

**Epidemic cerebro-spinal meningitis**, or cerebro-spinal fever, is an acute infectious disease caused by a specific organism, the meningococcus. The disease is spread to a large extent through the medium of carriers who harbour the organisms in their throats, and it sometimes occurs in epidemics when conditions are overcrowded and unhealthy. Sporadic cases also occur. The onset is usually acute with vomiting and severe pains in the head and sometimes in the body ; the general symptoms characteristic of meningitis, which are described below, soon appear. A rash due to small haemorrhages under the skin is often seen and the disease has been called " spotted fever " from the appearance caused by these spots. The death rate is very high. Some form of paralysis, with or without mental impairment, is a common sequel in the cases which recover. Another condition which may be caused by the disease is hydrocephalus or " water on the brain ".

**Tuberculous meningitis** is commonly seen in children from about one to five years old. It is usually secondary to another focus of tuberculous disease in some other part such as the lungs or glands, the bacilli from the broken down diseased tissues being carried to the brain. This form of meningitis may be subacute or chronic, but it is usually fatal ultimately ; it is uncommon in South Africa.



**Suppurative or septic meningitis** may be caused by the spread of infection to the brain in middle ear disease, or from some other septic focus in the body.

**Acute meningitis** also occurs as a complication of pneumonia, septicaemia and some of the acute specific fevers. **Subacute and chronic** forms may be due to syphilitic infection.

**Spinal meningitis** may be due to infection of the spinal meninges with the organism of tuberculosis, pneumonia or other infectious diseases. It is often combined with cerebral meningitis. The inflammation causes compression and irritation of the spinal nerve roots, and severe pain, paralysis, rigidity and loss of control over the sphincters may occur as a result.

*Symptoms.*—The symptoms of meningitis may be divided into two groups, namely, those due to the increase of intracranial pressure caused by the accumulation of inflammatory exudate between the brain and the meninges, and those which are the result of the irritation or compression of nerves or of parts of the brain. Fever is also present as a rule and may be high in the septic form. The symptoms caused by the increased intracranial pressure are chiefly headache, which may be intense, vomiting, usually of the cerebral type, and convulsions, which often mark the onset in children; there is usually retraction and rigidity of the neck and the patient is irritable and hyperaesthetic, lying curled up in bed and resenting being touched or interfered with in any way; delirium and coma sometimes occur.

The effects of the irritation and compression of nerves are seen in impairment of vision, due to inflammation of the optic nerve, squint, ptosis, inequality of the pupils and loss of their reaction to light; paralysis of the parts supplied by the facial and other cranial nerves also occurs.

*Treatment.*—In the epidemic form, the patient should be isolated and precautions taken to prevent the spread of the disease. In every form, the patient should be kept in a dark room and as quiet as possible; an ice bag may be applied to the head, plenty of nourishment should be given and the

bowels kept open. Intracranial pressure may be relieved by withdrawing cerebro-spinal fluid by lumbar puncture at intervals, and, in the epidemic form, anti-meningococcus serum is given by injection into the spinal canal.

### **Encephalitis.**

Encephalitis means inflammation of the brain. It may be caused by the spread of infection from middle ear disease or cerebral abscess or from an infectious focus in some other part of the body. An epidemic form, due to a specific organism, also occurs.

**Epidemic Encephalitis.**—A special form of encephalitis is that known as epidemic encephalitis, encephalitis lethargica, or “sleepy sickness”. This is an acute specific infection of the brain which occurs as a rule in epidemics, though sporadic cases are frequently seen. It was first observed about 1917 and is supposed to be due to a virus.

*Symptoms.*—The initial symptoms may resemble those of influenza and consist chiefly of general malaise, slight fever and pains in the back and limbs. After some days the patient becomes lethargic or drowsy and an erythematous rash may appear. In some cases the condition is more acute and delirium or convulsions occur at the onset. The drowsiness becomes more pronounced and sometimes the sleep rhythm is inverted, i.e., the patient is somnolent all day and restless and noisy during the night. Muscular twitchings or spasms may occur and there is often a masklike expression of the face. Signs of involvement of the cranial nerves, such as squint, double vision or unequal pupils, usually develop sooner or later. The patient remains drowsy and irritable for several days or even weeks. The acute delirious cases often end fatally within a short period.

In some cases which appear to have recovered and in others in which symptoms have been only slight, the disease is apt to be followed by serious mental or physical recurrences or sequels; these, however, may not make their appearance until months or even years after apparent recovery. One of the sequels is the development of a group of symptoms, called



the **Parkinsonian syndrome**. In this condition the face has a mask-like expression which is characteristic, the limbs are rigid, movements are slow and jerky, and there are usually coarse tremors. The posture and gait may be affected, and involuntary movements, such as twitchings, occur; about half the cases shew some form of mental deterioration.

In children particularly, behaviour disorders are common, and a previously normal child may become extremely irritable, unruly and impulsive or suffer from seizures. States of stupor with stereotyped movements may also develop after encephalitis.

*Treatment.*—The patient should be isolated and measures taken to prevent the spread of infection. Cold may be applied to the head, and delirious cases must be kept under supervision.

### **Tumours of the Brain.**

Tumours of various kinds may develop in the brain or the intracranial cavity. Some originate from the connective tissue of the brain or meninges and are of a simple or benign type; others, such as cancer, are usually secondary to a growth elsewhere in the body. Gummata, or syphilitic tumours, also occur. Tuberculous tumours are seen chiefly in children. In cases of parasitic infections such as tape worm, cysts may form in the brain.

**A cerebral abscess** may form in the brain by the spread of infection from the skull or from other parts of the body. The signs resemble those of a cerebral tumour.

The *symptoms* of intracranial tumour are both general and local. The former, which are the result of the increased intracranial pressure caused by the tumour, are chiefly headache, vomiting, optic neuritis and slow pulse; convulsions and states of mental disorder may also occur.

The local symptoms vary with the situation of the tumour and the part of the brain affected; localised convulsions and paralysis may be caused.



Medicinal *treatment* is given in the case of syphilitic tumours. A small proportion of other forms of tumours may be successfully removed by operation, and surgical treatment may also be used to relieve the symptoms due to pressure.

### Apoplexy.

Apoplexy, commonly called a "stroke", is the term applied to the condition caused by cerebral haemorrhage, the rupture of a blood vessel in the brain or cranial cavity. It usually occurs in persons over fifty years of age who suffer from arterio-sclerosis, a condition in which the arteries have degenerated and have lost their elasticity and become brittle. Arterio-sclerosis may be due to senile changes, high blood pressure or chronic kidney disease or it may be caused by syphilis, alcohol or lead poisoning. An apoplectic seizure may be brought on by mental or physical strain. The extravasated blood from the ruptured artery damages the tissues of the brain and increases the intracranial pressure.

*Symptoms.*—The patient may have had premonitory symptoms, such as headaches and impairment of vision or attacks of giddiness and confusion, before the occurrence of the apoplectic seizure. The onset is sudden; the patient may complain of intense headache and he becomes unconscious after a few minutes. The face is congested, the breathing stertorous, and the pulse may be slow, irregular and of high tension; the reflexes are abolished at first and incontinence of urine and faeces often occurs. There may be paralysis, at first flaccid, of the face, arm and leg on the side opposite that in which the haemorrhage has occurred in the brain. Death may occur within an hour or a few days without the patient having recovered consciousness. In the cases which recover, consciousness is gradually regained, but paralysis, usually in the form of a spastic hemiplegia, often remains. Anaesthesia, impairment of vision, aphasia and mental deterioration may also follow an apoplectic attack.

*Treatment.*—Patients with arterial degeneration and high arterial tension should be restricted as regards their diet, and the proportion of protein should be reduced. In the event of

the occurrence of an apoplectic seizure, the patient should be put to bed with head and shoulders raised and kept absolutely quiet. An icebag may be put to the head, and hot water bottles to the feet.

If conscious, he should make as little effort as possible. If there is unconsciousness with stertorous breathing, the patient should be turned on his side to prevent the tongue falling back and hindering respiration. All tight clothing round the neck should be removed.

The bowels should be freely moved and enemata given if necessary. These patients frequently suffer from retention of urine, and they may have to be catheterised.

Bedsore are very liable to occur, especially in patients who are incontinent. Hot water bottles should be well covered so as not to burn the patient.

Early movements of the joints on the paralysed side, with light massage, will reduce pain and discomfort and help to prevent wasting of the muscles and stiffening of the limb. Supports or splints may be applied to overcome any tendency to contractures.

### **Cerebral Thrombosis and Embolism.**

The term apoplexy is also used to denote the state of unconsciousness which occurs in cerebral thrombosis and cerebral embolism.

**Cerebral thrombosis** is a condition in which a blood clot forms in one of the arteries of the brain and obstructs the supply of blood to the part supplied by the vessel. It occurs in elderly people with feeble circulation and degenerated arteries in which the smooth lining is damaged and roughened by inflammation or atheroma. The symptoms resemble those of cerebral haemorrhage, but the onset is usually more gradual.

**Cerebral embolism** results from the blocking of an artery in the brain by some material which has been carried in the blood stream from another part of the body. This material usually consists of a detached piece of blood clot, a mass of

bacteria or a fragment from the edge of a diseased heart valve. There is often sudden loss of consciousness and the symptoms are similar to those of cerebral haemorrhage. Cerebral embolism occurs most frequently in cases of malignant endocarditis and valvular disease of the heart.

### Epilepsy.

Epilepsy is a chronic nervous disorder characterised chiefly by recurrent attacks of loss of consciousness with or without convulsions. The term **idiopathic epilepsy** is used for cases in which the origin of the condition is obscure and no apparent cause exists. It is probable that there are many different forms of idiopathic epilepsy, some due to physical and others to mental causes. Besides idiopathic epilepsy, there are other conditions in which periodic loss of consciousness and convulsions occur, e.g., toxic states, such as alcoholism and uraemia, general paralysis and organic brain disease. Hysterical convulsions may simulate epilepsy but consciousness is wholly or partly retained. **Jacksonian epilepsy** is a form due to some local organic lesion of the brain in which localised convulsions occur in various parts of the body corresponding to the region of the brain involved. Consciousness usually remains intact in this form of epilepsy.

*Symptoms.*—Epileptic patients have usually a characteristic temperament; they are mostly self-centred, hypochondriacal and quarrelsome. In a large proportion the condition is associated with mental deficiency or disorder and most of these cases show progressive mental deterioration and are also subject to recurrent temporary states in which excitement and confusion are prominent symptoms.

The epileptic fits recur at intervals, the duration of which varies widely. Some patients have fits chiefly during the night, and others during the day.

Epilepsy is divided into two forms, namely, **major epilepsy** or **grand mal**, and **minor epilepsy** or **petit mal**, according to the type of fit. Either of these may occur alone, or a patient may suffer from both major and minor forms.



In some cases of epilepsy the patient may experience an **aura** or warning, immediately before the attack. This may take the form of a sensation, such as a sinking feeling in the abdomen, a vision, the sound of singing from afar, or an unpleasant smell or taste, etc. These are called sensory auras. Motor auras are also seen and, in this form, the patient performs involuntary or impulsive movements, such as running round in a circle. In some cases there is a psychic aura consisting of a dreamy state or the recollection of some past experience. The type of aura varies with every patient but, as a rule, it remains constant for each individual.

In a **major epileptic fit**, the patient suddenly loses consciousness; all the voluntary muscles, including those of respiration, become tonically contracted and the patient suddenly falls uttering a loud cry which is due to respiratory spasm; his face is cyanosed, the pupils are dilated and insensitive to light and the eyes are usually turned to one side. This is called the **tonic stage** of an epileptic fit and it usually lasts about half a minute. It is succeeded by the **clonic stage**, in which clonic muscular contractions occur, causing jerking movements which are at first rapid and then gradually become slower until they cease, usually after about two or three minutes. During the clonic stage, air re-enters the lungs and the cyanosis disappears; the breathing is stertorous and froth, often blood stained, collects round the lips and is ejected from the mouth; the eyes are rolled from side to side and there is sometimes gnashing of the teeth; the patient may pass urine and faeces involuntarily during this stage. After the clonic convulsions have ceased the patient passes into the **stage of coma** with stertorous breathing and flaccid limbs. The coma may last several minutes and is often succeeded by a period of sleep, after which consciousness gradually returns.

In a **minor epileptic fit** there is a sudden loss of consciousness which may be only momentary, and there are no convulsions, though slight twitchings or purposeless movements sometimes occur. The patient suddenly stops working or talking or whatever he is doing at the moment, his face

becomes pale and expressionless, the eyes have often a vacant look and he may appear to be dizzy. The attacks may last a minute or two or only a few seconds and the patient then recovers and resumes what he has been doing before the fit. Sometimes he is rather confused for a while and seems to have lost the thread of the conversation or forgotten what he was doing immediately before the attack.

**Status epilepticus** is the term applied to the condition in which the patient suffers from a succession of fits, often a large number, without regaining consciousness between them. The condition is a grave one and often ends fatally.

*Treatment.*—As a result of the sudden seizures to which they are subject, epileptic patients are liable to accidents and injuries, and should therefore be kept under close supervision. They should lead a regular and temperate life and abstain from alcohol completely. The bowels should act daily, and the regular administration of a saline aperient is often beneficial. The provision of suitable and regular occupation is an important part of the treatment ; it provides interest, maintains self respect and helps to delay the progress of deterioration. Farm colonies for the accommodation of epileptics have been established and afford opportunities for healthy and safe forms of occupation.

Drugs, such as bromides and luminal, are often given for long periods ; these medicines must be administered regularly as prescribed and their effect should be noted.

Epileptics should always be under observation when they have a bath because of the danger of drowning while in a fit.

The diet should be simple and nourishing and the proportion of protein should be diminished. The food must be minced for those who bolt their food, or who are in the habit of having fits and choking during meals.

The accidents to which epileptics are liable, on the occasions when they have fits, are injuries from falls and suffocation from occlusion of the air passages.



To prevent injuries from falls, the patient should be kept under constant supervision. Sometimes the appearance or demeanour of the patient gives warning of the imminence of a fit and he may be caught and supported before he falls. Epileptics should sleep on low bedsteads, and a mattress may be laid at the sides of the bed for those who are in the habit of having fits during the night and falling out of bed. Epileptics should not be allowed in places where a fall might have serious results. They must be kept away from fires, scalding water and machinery ; they should not be allowed to do work which involves climbing ladders or standing on chairs or tables. They should keep away from dams, railway tracks and street traffic. In going upstairs the nurse should follow an epileptic patient and, in coming down, she should precede him.

Suffocation may be caused by the impaction of food or some foreign body in the air passages, by the inhalation of particles of food, or by the patient turning on his face while in a fit. To prevent suffocation from impaction of food, the patient may be given soft or minced food, and he should not be allowed to leave the table with his mouth full or before he has finished the meal. One of the first things to be done, when a patient has a fit, is to examine the mouth and throat and to remove anything which might cause obstruction, such as food, artificial teeth, or tobacco.

Suffocation by the inhalation of particles of food usually occurs in unconscious patients, and the danger may be diminished by placing the patient on his side with his head at a lower level so that the contents of the mouth can run out.

To prevent a patient suffocating by turning on his face during a fit, he should be kept under constant supervision day and night ; he should not be allowed to sleep on a feather or soft pillow.

In all cases of suffocation, after the cause has been removed, artificial respiration should be performed, if the patient has not begun to breathe.

The management and treatment of an epileptic patient during a fit is dealt with in the Preliminary Handbook.



### Chorea.

Chorea, or St. Vitus's dance, is an acute infectious disease involving the brain. It is characterised by irregular involuntary movements, inco-ordination and muscular weakness. The disease is regarded as a manifestation of acute rheumatism and is usually associated with endocarditis. It is generally seen in children between the ages of five and fifteen years, more frequently in girls, and there is usually a history of rheumatism or tonsillitis.

*Symptoms.*—The onset is usually insidious, and early manifestations are often mistaken for mere fidgetting or clumsiness. The condition gradually becomes worse and the characteristic signs appear. The movements, which usually cease during sleep, are irregular, involuntary, spasmodic and purposeless. They may be evenly distributed over the body or confined to one part only. Spasmodic contractions of the facial muscles cause grimacing; the forehead may be wrinkled, the eyebrows pulled up or down. The tongue is twisted, thrust into the cheeks or protruded from the mouth. The head is jerked about and the hands show constant irregular movements. Voluntary movements are clumsy and inco-ordinate, articulation is often impaired and speech is loud and explosive; there may also be difficulty in swallowing. There is usually some degree of muscular weakness present, and symptoms of mental disorder are often observed.

*Treatment.*—The child must be put to bed and kept quiet. In severe cases, the bed may be fitted with padded side pieces to prevent the bruising which often occurs when the limbs and body are violently flung about. It is advisable that the patient should be isolated in order to avoid any excitement or irritation, and visitors should not be allowed during the acute stage. The diet should be light and nutritious, and the bowels must be kept open. Prolonged warm baths may be given for their sedative effect. During convalescence, breathing and physical exercises may be given, but the resumption of full activity should be gradual on account of the heart weakness which is usually present.

**Huntington's chorea** is a hereditary form of chorea associated with mental disorder and has no relation to rheumatic chorea.

### **Multiple Sclerosis.**

Multiple sclerosis, or disseminated sclerosis, is a chronic disease of the central nervous system in which scattered collections of fibrous tissue form in the brain and spinal cord. It usually occurs between the ages of fifteen and thirty-five years. It is uncommon in South Africa.

*Symptoms.*—The onset is insidious and the early symptoms are so fleeting and variable that the condition is often regarded as one of hysteria. When fully developed, the cardinal symptoms are tremors, scanning speech, nystagmus, and a spastic paresis and ataxia, chiefly affecting the lower limbs. The abdominal reflexes are lost; optic atrophy with impairment of vision may occur in the later stages. The tremor is an intention one, it ceases during rest and occurs only during voluntary movement. The speech is jerky and the voice is unmodulated. Nystagmus is usually from side to side. The deep reflexes are exaggerated and ankle clonus is usually obtained; the plantar reflex is extensor. Emotional instability is often a prominent sign, the patient laughing and weeping alternately for no apparent reason. Some cases develop mental disorder. The disease is slowly progressive and the patient ultimately becomes bedridden.

*Treatment.*—Attention should be given to the patient's general health and nutrition. In the early stages, occupation and light manual work are beneficial. In the later stages the patient will require assistance in dressing, walking and feeding.

### **Acute Poliomyelitis.**

Acute poliomyelitis, or infantile paralysis, is an acute infectious disease of the spinal cord involving chiefly the motor cells of the anterior horns. It is supposed to be due to a filterable virus, and children and young adults are most frequently attacked. The disease is spread by carriers; it may occur in epidemics or sporadically.

*Symptoms.*—After an incubation period of two to ten days the child becomes fretful and restless and his temperature is found to be raised. He may complain of sore throat; vomiting, sweating and diarrhoea are sometimes present. There is usually severe headache and general hyperaesthesia of the body; the muscles are painful and tender, and the child may cry out when moved or touched. After two or three days, it is noticed that one or more of the limbs, usually the lower, is not being moved, and examination reveals that groups of muscles in the affected limbs are paralysed and that the limbs are limp and flaccid. The paralysis is followed by rapid wasting, the deep reflexes are lost and the reaction of degeneration is obtained on electrical stimulation. The acute stage of the disease usually lasts two or three weeks. The intercostal muscles and diaphragm may become affected and death from respiratory failure may ensue. In most of the cases that recover from the infection a variable degree of permanent paralysis remains and this is usually associated with deformity and shortening of the limb.

In some cases the infection may spread to the brain and cause encephalitis.

*Treatment.*—The patient should be isolated for a month or longer, and all discharges and excretions should be disinfected. He must be kept in bed and as quiet as possible during the acute stage, and excitement and movement should be avoided. The paralysed parts should be supported in a relaxed position to prevent the muscles being overstretched. After about six weeks, when the acute symptoms have subsided, a course of treatment by massage, by movements, at first only passive and later active, and by electricity, is useful in restoring some degree of power to the limb and preventing deformities and contractures. This treatment should be kept up for a long period in order to prevent the destruction of those muscle fibres which are capable of recovery and so to obtain the maximum amount of improvement.



### Locomotor Ataxia.

Locomotor ataxia, or tabes dorsalis, is a chronic syphilitic disease of the spinal cord involving chiefly the posterior nerve roots and the afferent tracts (posterior columns). It is usually seen in men between the ages of twenty-five and forty-five years, and it develops on the average about ten years after the primary syphilitic infection, though the period may be as long as twenty-five years in some cases.

*Symptoms.*—The nature and the order of appearance of the symptoms are irregular and variable. The onset is usually insidious and is characterised by pains of various kinds, which at first are often regarded as rheumatic. Some of these pains, called **lightning pains**, are intense and of a shooting character and chiefly affect the backs of the lower limbs; their duration is variable and they sometimes disappear for long periods and subsequently recur. Pains round the trunk, the so-called **girdle pains**, may be experienced. The knee and ankle jerks are usually lost early in the disease; the pupils are often small and may be unequal or irregular and show the **Argyll Robertson reaction**, i.e., they fail to react to light but retain the power of accommodation. Ptosis sometimes occurs and atrophy of the optic nerves, causing blindness, is often an early sign. After a time ataxia appears; the patient's gait becomes unsteady and he may show **Romberg's sign**, i.e., an inability to stand without swaying with his eyes closed and his feet together. The ataxia gradually increases, but its progress is usually slow and irregular. Defective cutaneous sensation is sometimes found in patches of irregular distribution or as zones of anaesthesia round the trunk. **Trophic lesions**, such as ulcers and swelling of joints, sometimes develop. The ulcers are called **perforating ulcers** and are usually seen on the sole of the foot; the joint swelling is known as a **Charcot's joint** and the knee is most frequently affected. Attacks of pain and discomfort lasting some hours or days are sometimes experienced in organs such as the stomach, larynx and bladder. These are called **crises**; gastric crises are the most frequent and are characterised by pain and vomiting.

The progress of the disease is often very slow. Usually after a number of years the ataxia has increased to such an extent that the patient is unable to walk, or even stand, and has to remain in bed. Ultimately, he dies from exhaustion or from some complication or intercurrent disease. In some cases the progress of the disease may be arrested for long periods.

A certain proportion of tabetic patients develop the form of mental disorder called **general paralysis**. Some show mental symptoms which are not associated with general paralysis, chiefly states of depression and agitation with hallucinations.

*Treatment.*—Special exercises have been devised to alleviate the ataxia. The patient may be allowed to walk so long as he is able, but fatigue should be avoided. A wheeled chair should be provided when the patient can no longer get about on his feet. The bowels and bladder require attention, and it may be necessary to pass a catheter if retention occurs.

### General Paralysis.

General paralysis of the insane, or parenchymatous cerebral syphilis, and interstitial cerebral syphilis are the terms applied to two different forms of syphilitic disease of the brain.

General paralysis is characterised by mental symptoms and by bodily signs of brain disease and usually shows progressive mental and physical deterioration. The disease may appear during childhood or adolescence in cases of congenital syphilis.

In interstitial cerebral syphilis there are physical signs of organic brain disease and the condition may be accompanied by symptoms of mental disorder.

### Neuritis and Multiple Neuritis.

The term neuritis means inflammation of a peripheral nerve. When the inflammation is local and limited to one nerve or part of the body, the term neuritis is used ; when it is general and a number of nerves are affected, the condition is called multiple neuritis.

In **neuritis**, the fibrous tissue of the nerve sheath is the part chiefly affected. It may be caused by injury, cold or the poisons produced by bacterial infection. When the nerve affected is a sensory one the symptoms are usually pain, numbness and loss of sensation ; when it is a motor one, paralysis may occur. Neuralgia may be caused by neuritis of the fifth cranial nerve, sciatica by inflammation of the sciatic nerve and facial paralysis by injury of the seventh cranial nerve. Impairment of vision may be due to inflammation of the optic nerve.

In **multiple neuritis**, or **polyneuritis**, the actual nerve fibres composing the nerves are inflamed and become degenerated. The peripheral nerves in general are affected, those of the limbs being chiefly involved, and the distribution of the symptoms is usually symmetrical. Multiple neuritis is caused by poisons or toxins of various kinds ; some are produced as a result of bacterial infection, some are formed by the body in diseases such as diabetes and beri-beri, and others consist of substances taken into the body, such as alcohol, arsenic, lead and carbon monoxide.

*Symptoms.*—The early symptoms are usually sensory ; the patient complains of pain and a feeling of numbness and tingling in the parts affected, and there is often tenderness of the leg muscles, particularly in alcoholic cases. There may also be scattered patches of anaesthesia. Paralysis, chiefly affecting the extensor muscles of the limbs, develops later ; the paralysis is a flaccid one, the muscles waste and the deep reflexes are usually lost. In the cases due to alcohol, the foot is often dropped and the gait high-stepping ; in lead poisoning, wrist drop occurs owing to paralysis of the extensor



muscles of the forearm. Trophic lesions, such as glossy skin and brittle nails, are often seen in the parts affected. In some cases of polyneuritis, particularly the alcoholic ones, a form of mental disorder called Korsakow's psychosis occurs; memory is the mental function chiefly affected in this condition.

*Treatment.*—The cause of the condition should be eliminated if possible. The patient should be kept at rest in bed in the early stages. After the acute stage is over, massage, movements and electricity may be employed to restore the wasted muscles and to prevent the development of deformities.

### *Examination of the Nervous System.*

Mental disorder and defect are sometimes associated with disease of the nervous system and the nurse should be acquainted with the methods of making an examination of this system and know the articles which will be required by the doctor for this purpose.



FIG. 58.—PERCUSSOR.

The following instruments and articles are usually needed and they should be kept readily available in the ward :—

- (1) Percussion hammer, to test the deep reflexes.
- (2) A camel's hair brush, a fine feather or a tuft of cotton wool, to test the sensation of touch.
- (3) A pin or needle, to test the sensation of pain.
- (4) Two test tubes, one to contain warm and the other cold water, to test temperature sensation.
- (5) Bottles containing oil of cloves, turpentine, rose water, peppermint or other substances, to test the sensation of smell.
- (6) Bottles containing solutions of salt, sugar, quinine and citric acid, to test the sensation of taste. These substances may be used in powder form.

- (7) A tuning fork, to test vibration-sensation and hearing.
- (8) A small pair of blunt compasses, to test ability to discriminate between the separated points in contact with the skin.
- (9) A lumbar puncture syringe and needles, an ophthalmoscope to examine the retinae, a sphygmomanometer to measure the blood pressure and an electric battery for testing the reaction of muscles may also be needed.

## CHAPTER XXXII.

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### DISEASES OF THE EYE, EAR, NOSE AND THROAT.

BLEPHARITIS, CONJUNCTIVITIS, ETC.—OTITIS MEDIA, MASTOIDITIS — RHINITIS, POLYPI, ADENOIDS — TONSILLITIS, LARYNGITIS.

#### Diseases of the Eye.

**Blepharitis** is inflammation of the eyelids. It is usually a chronic condition occurring in weakly children and those who are unhealthy and badly nourished. The signs are swelling and redness of the edges of the lids, particularly the upper one, and a constant discharge which dries and forms crusts round the roots of the eyelashes.

The condition is treated by washing with an alkaline lotion to remove the crusts and by irrigation with an antiseptic lotion. Yellow oxide of mercury or boracic ointment is applied to the edges of the lids.

**Stye.**—This is a localised inflammation round the root of an eyelash. It causes pain and swelling of the lid and usually ends by suppuration and discharge of the pus. It may be treated by bathing with warm boracic lotion. The application of yellow oxide of mercury ointment to the eyelids may prevent the development of more styes.

**Conjunctivitis or Ophthalmia.**—This is inflammation of the conjunctiva, the thin membrane which covers the eyeball and lines the lids. It is a common condition and may be either acute or chronic. The usual symptoms are a sandy or gritty sensation under the lids, a bloodshot appearance of the eye, and a discharge which may be thin and watery, or purulent. In severe cases, there is pain and oedema of the lids, and the



conjunctiva becomes acutely congested and swollen. There are three chief varieties of conjunctivitis, viz., catarrhal, purulent, and granular.

In the **catarrhal** form the eye is bloodshot, there is a sandy feeling under the lids and a watery discharge.

In the **purulent** variety the inflammation is more acute. It usually develops rapidly, the conjunctiva becomes red and swollen, and there is a profuse discharge watery at first and purulent later. Ulceration of the cornea and loss of vision may follow if effective treatment is not promptly employed. Purulent conjunctivitis is caused by infection, usually by the gonococcus, and is very contagious. **Ophthalmia neonatorum** is a virulent type of purulent conjunctivitis which occurs in infants soon after birth. It is one of the commonest causes of blindness.

**Granular conjunctivitis**, or **trachoma**, is a chronic inflammatory state of the conjunctiva in which small granules about the size of a pin's head develop on the inner surfaces of the lids, particularly the upper one. It occurs in people who are ill-nourished and unhealthy, and is probably caused by infection.

The treatment of conjunctivitis consists chiefly of irrigation of the eye with antiseptic lotion and the application of ointment to the lids. Precautions must be taken, especially with the purulent variety, to prevent infection of the healthy eye which may be protected with a shield; the nurse must be careful to protect her own eyes. Drops of silver nitrate solution or other antiseptics may be instilled into eyes of a newly-born infant as a preventive measure.

**Corneal Ulcers.**—Ulcers may develop on the surface of the cornea as a result of an abrasion or infection. They may leave scars or opacities which interfere with vision.

**Cataract** is an opacity or loss of transparency of the crystalline lens. It causes gradual loss of sight. It usually develops after the age of fifty years and is treated by removal of the lens. It occurs frequently in mongolian imbeciles.

**Squint, or strabismus**, is a condition in which the two eyes look in different directions at the same time. It is usually due to paralysis of one or more of the muscles which move the eyeball.

**Ptoxis**, or drooping of the upper eyelid, occurs in diseases involving the third cranial nerve and causing paralysis of the lid.

**Nystagmus** is the term applied to a condition in which there are repeated involuntary jerky movements of the eye either up and down, from side to side, or in a rotary direction. It occurs in various diseases of the nervous system and in some cases of defective vision.

### Diseases of the Ear.

**Impaction of Wax.**—An accumulation of wax in the ear passage is a common cause of partial deafness and sometimes causes noises and feelings of dizziness.

The wax is removed by syringing ; it may be necessary to soften it first, by instilling a few drops of bicarbonate of soda or peroxide of hydrogen solution.

**Otitis media**, or inflammation of the middle ear, may be either acute or chronic. It may develop as a complication of a severe "cold", or of an infectious disease such as scarlet fever. The acute form causes severe pain in the ear, and there is usually a rise of temperature to about 103° F. If suppuration occurs, the ear drum may become perforated and there is a discharge of pus from the ear.

The patient should be kept in bed and the pain relieved by the application of heat. In some cases it may be necessary for the doctor to incise the ear drum to allow the pus to discharge.

Chronic inflammation of the middle ear may follow the acute form and is usually associated with a perforation of the drum. It is accompanied by a discharge which is sometimes purulent and offensive. It is treated by the instillation of antiseptic liquids or by syringing.

**Mastoiditis** is a grave complication of middle ear disease. The mastoid process, the bony projection of the temporal bone behind the ear, contains a cavity called the mastoid antrum. In cases of otitis media, the infection may spread to the antrum and cause the formation of an abscess in the bone. The pus formed may burst through the bone and discharge through the skin, or it may travel down along the muscles of the neck, or penetrate the thin sheet of bone which divides the antrum from the cranial cavity and cause meningitis or cerebral abscess. The symptoms of mastoiditis are acute pain and tenderness behind the ear, dizziness, and sometimes rigors and high fever. The skin over the mastoid process may be red and swollen.

The condition is treated by surgical operation, the abscess being opened and drained. After the operation the ear is usually syringed regularly and the nurse should observe the patient particularly for signs of cerebral complications, such as squint, facial paralysis, etc.

### **Diseases of the Nose.**

**Rhinitis** is the term applied to inflammation of the mucous membrane of the nasal cavity. It is usually caused by microbic infection and it may be acute or chronic. Acute rhinitis occurs in an ordinary cold in the head.

Inflammation and suppuration may spread from the nose to one of the nasal sinuses, which are cavities in the bones surrounding the nose. The maxillary antrum, in the superior maxillary bone, is frequently infected and it may be necessary to make an opening into the cavity by operation in order to clean and drain it.

**Polypi** are soft, jelly-like tumours which grow from the mucous membrane to which they are attached by a stalk. They cause obstruction to breathing and may be removed by operation.

**Adenoids** are fleshy swellings or overgrowths of the glandular tissue found in the pharynx at the back of the nose. They are seen frequently in children and are often associated



with enlarged tonsils. They obstruct the passage between the nose and the pharynx and prevent breathing through the nose. The child has to keep his mouth open in order to breathe through it and often has a characteristic appearance with a vacant expression. Deafness and earache are frequent complications of the condition. Adenoids are treated by operation, the vegetations being scraped away with a curette or other instrument.

### Diseases of the Throat.

**Tonsillitis**, or inflammation of the tonsils, occurs in various diseases, such as an ordinary cold, scarlet fever, rheumatism. It also occurs in diphtheria where it is accompanied by a membranous exudation. In **simple acute tonsillitis**, the tonsils become red and swollen, and there may be slight fever and difficulty in swallowing.

**Follicular tonsillitis** is a more acute disease. It often begins with a rigor, the temperature may rise to about 103° F., and there is usually severe headache. The throat is red and swollen and the surface of the tonsils is dotted with small yellowish-white points of pus.

**Quinsy** is a condition in which an abscess forms in the tonsil. The swelling of the tonsils obstructs breathing and swallowing and causes severe pain. The abscess may burst or it may be necessary to incise it in order to let out the pus.

In cases of acute tonsillitis the patient should be confined to bed and given only liquid or semi-solid food. Local treatment, in the form of gargles, painting and inhalation, may be applied.

In **chronic tonsillitis**, the tonsils are slightly inflamed. They become enlarged and may have to be removed because they harbour germs and are subject to repeated attacks of acute inflammation. They may also obstruct breathing.

**Laryngitis**, or inflammation of the larynx, may be caused by colds, the inhalation of irritating gases, the swallowing of corrosive poisons, or by scalding from drinking hot liquids ; it may also occur in various infectious diseases. The larynx is a part of the body which may be attacked by tuberculosis and diphtheria. The symptoms vary according to its intensity, but there is usually soreness of the throat, cough, and hoarseness or loss of voice. In severe cases, there may be obstruction to breathing. The patient should be kept in bed and should not use his voice. Inhalations may be given. In cases of obstruction to breathing, it may be necessary to perform tracheotomy.

## CHAPTER XXXIII.

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### DEFICIENCY DISEASES.

#### SCURVY—RICKETS—PELLAGRA—BERI-BERI.

This term is applied to a group of diseases which are caused by a deficiency of one of the various **vitamins** or accessory food factors. The importance of these substances was first recognised about twenty-five years ago when their existence was discovered. Several different varieties of vitamins have since been isolated and they are designated by the letters A, B, C, D and E.

Vitamin A is a fat soluble substance present in butter, liver, yolk of egg, carrots and other vegetables, etc.; it promotes growth and development and increases the resistance of the body to infection.

Vitamin B is a water soluble vitamin which contains several factors designated B. 1 to B. 6. It is present in the seeds of plants, egg yolk and many fruits and vegetables. It stimulates growth and development, and deficiency or non-assimilation of certain of its constituents is the cause of the diseases called pellagra and beri-beri and, possibly, alcoholic neuritis.

Vitamin C is water soluble and is found in fresh fruits and vegetables; the disease known as scurvy occurs when this vitamin is absent from the diet.

Vitamin D is fat soluble; it is contained in animal fats and is also produced by the action of sunlight on a certain constituent of the skin; it is necessary for the development of bone and teeth.

Vitamin E is fat soluble and is found in green plants, such as lettuce; it plays an important part in the function of reproduction.



### **Scurvy.**

Scurvy, or scorbutus is a nutritional disease caused by the lack of vitamin C in the dietary. It was formerly very common among sailors owing to the lack of fresh food during prolonged voyages. It is sometimes seen in mental patients who persistently refuse to eat certain foodstuffs such as green vegetables.

*Symptoms.*—The disease begins insidiously with general debility and vague pains in the limbs and joints; anaemia and shortness of breath may be observed and the face becomes sallow or dusky; the gums are tender and bleed readily and the breath is often offensive. After some days or weeks the gums may ulcerate and the teeth drop out; haemorrhages appear in the skin and subcutaneous tissue in the form of petechiae and ecchymoses. The former are small red or purple spots; the latter form large discoloured swellings resembling bruises, which are seen more frequently on the lower limbs and over the flexures of the joints. The exhaustion and anaemia continue to increase in intensity unless the disease is recognised and properly treated.

*Treatment.*—The preventive and curative treatment consists of the provision of an adequate supply of foodstuffs, such as fresh vegetables and fruit, containing the anti-scorbutic vitamin.

### **Rickets.**

Rickets is a disease of early childhood and is supposed to be caused by the lack of vitamin D. It is characterised by deficiency of lime in the bony tissues and by softening of the bones. It is common in poorly or improperly fed children and in places where there is little sunlight.

*Symptoms.*—The disease usually develops about the end of the first year, and the early symptoms consist of loss of appetite, restlessness and general weakness. The child looks pale and flabby; excessive sweating about the head is a common sign, and attacks of bronchitis or diarrhoea often occur. Later, changes and deformities in the bones are

observed. The ends of the long bones become enlarged and the bones are sometimes tender. In the ribs the enlargement produces a row of knobs at the junctions of the ends of the ribs with the costal cartilages; this has been called the "rickety rosary". The softening of the bones produces various deformities; the legs may be bowed or knock-kneed; the skull becomes large and square in shape and shows thickenings of the parietal and frontal eminences. The anterior fontanelle remains open for an abnormally long period and the development of the teeth is also delayed.

*Treatment.*—The development of the disease may be prevented by the provision of suitable food containing a sufficient amount of animal fat. The disease itself is treated by giving fresh milk, yolk of egg, or cod liver oil. Exposure to sunlight, natural or artificial, is beneficial.

### **Pellagra.**

Pellagra is a chronic disease, affecting chiefly the digestive and nervous systems and the skin; it is supposed to be caused by the absence of an essential constituent of diet, viz., vitamin B. 6, though a poison produced in diseased maize is also regarded as a possible etiological factor. The disease is common in Eastern and Southern Europe, the Southern States of America and Egypt; it also occurs in other countries, and many cases have been observed in South Africa.

*Symptoms.*—The progress of the disease is characterised by seasonal variations in its intensity; it usually shows exacerbations in the early spring followed by temporary periods of amelioration. It begins insidiously with general debility, loss of appetite, headache, and attacks of dizziness; afterwards, constipation or diarrhoea and stomatitis occur, and a red rash appears on parts of the skin exposed to the sun, such as the hands, face and neck. Tremors and weakness or paralysis of the limbs ultimately develop. The disease is accompanied by mental disorder and may continue for years, recurring with increased intensity every spring, and the patient becomes progressively more emaciated and exhausted.

*Treatment.*—The patient should be put to bed and given a diet rich in animal proteins ; to prevent the development of the disease a diet largely limited to maize should be avoided, and an adequate proportion of protein should be provided.

### **Beri-beri.**

This disease occurs in tropical countries where rice is the staple article of diet. It is the result of deficiency of vitamin B in the dietary. This factor is contained in the rice husk which is removed by polishing.

*Symptoms.*—The deficiency of this vitamin causes peripheral neuritis, and the disease is characterised by the development of paralysis and loss of sensation ; cardiac failure and dropsy also occur.

*Treatment.*—This consists of the provision of a nourishing and well balanced diet and the substitution of unpolished for polished rice.



## CHAPTER XXXIV.

### SOME OTHER COMMON DISEASES.

DIABETES—CANCER—ACUTE RHEUMATISM—CHRONIC RHEUMATISM—DISEASES OF THE THYROID GLAND—ANAEMIA.

#### Diabetes.

Diabetes is a disease characterised by the excretion of an excessive amount of urine containing sugar.

The disease may occur at all ages, but is commoner in middle life. In some cases, it may assume an acute form and prove fatal; in others, it runs a more chronic course. The younger the patient the more likely is the disease to prove quickly fatal.

The cause of this condition is a deficiency of the internal secretion, produced by the Islets of Langerhans in the pancreas, which controls the consumption of sugar by the tissues of the body. As a result, the sugar in the blood cannot be utilised for the body nutrition and is excreted in the urine.

*Symptoms.*—The chief symptoms are :—

- (i) Urine : Increase in amount ; this may be as much as two or three hundred ounces in twenty-four hours. Colour pale. Reaction acid. Specific gravity high (1020–1040). Sugar present in considerable quantity. Albumin may be found in later stages.
- (ii) Excessive thirst and dryness of the mouth.
- (iii) Voracious appetite.
- (iv) Progressive weakness and loss of weight.

During the course of the disease certain *complications* often appear of which the more common are :—

- (a) Skin lesions, boils, carbuncles, pruritus.
- (b) Gangrene of the extremities.
- (c) Albuminuria late in disease.

- (d) Coma. This may come on very suddenly or in some cases be preceded by headache, shortness of breath and a feeling of great weariness. The pulse becomes rapid and feeble, and the respiration prolonged and sighing. The breath and urine have a peculiar sweet odour like apples. The patient becomes anxious, distressed and sometimes excited, and soon passes into a state of coma which usually proves fatal unless promptly treated.

*Treatment.*—The treatment for this condition consists of the injection of **insulin** (the internal secretion of the pancreas), and alteration of diet by restricting the amount of carbohydrates to suit the needs of the individual patient. The doctor is guided largely by the amount of sugar found in the blood and the patient's reaction to the altered diet. The prescribed diet must be strictly observed, and the nurse must never permit the patient to take any additional article of food, even in small quantities.

Apart from attention to diet, the nurse must see that her patient has sufficient exercise, and a careful weekly record of the weight must be kept. Any indication of the onset of coma must immediately be reported.

### Cancer.

Cancer, or carcinoma, is a malignant tumour.

“ A **tumour** is a mass of new tissue which persists and grows independently of its surrounding structures and which has no physiological use ”. In other words, it is an abnormal growth or swelling found in the tissues of the body and serving no useful purpose. There are two types of tumours—simple and malignant. **Simple tumours** are surrounded by a membrane or capsule and, as they grow bigger, they push the surrounding tissues in front of them. They do not invade the tissues and destroy them and, when removed surgically, they do not recur. **Malignant tumours**, on the other hand, are not in a capsule. They do invade and destroy surrounding tissues and tend to recur after removal, and they also tend to cause

similar tumours or "secondary growths" elsewhere in the body. One of the most common types of malignant tumour is cancer.

Cancerous growths rarely make their appearance before middle age. The most common sites for the primary growth (i.e. the original tumour) are in the skin, alimentary canal, breast, uterus and external genitals, but secondary growths may appear anywhere in the body, spread by lymphatics or blood stream.

*Symptoms.*—The symptoms of cancer naturally depend on the situation of the disease, and may be divided into (a) local symptoms, and (b) general symptoms.

(a) Local.—Pain occurs at the site of the growth. When the growth is in an accessible situation a hard and somewhat lumpy swelling may be felt. When the growth is in or near the skin, the tumour breaks down and an ulcer forms and usually produces an offensive discharge. Carcinoma of the stomach often causes haematemesis and melaena (blood in vomit and stool).

(b) General.—Frequently before local symptoms are noted the patient shows evidence of general debility, loses weight, and becomes pale and worn. As the disease advances this condition becomes progressively worse and is often accompanied by acute suffering.

*Treatment.*—The treatment is surgical or by X-rays or radium. Except in the earliest stage of the disease, it is seldom that the entire growth can be removed, and any portion left is liable to continue to grow and to produce secondary growths elsewhere.

### **Acute Rheumatism.**

Acute rheumatism, or rheumatic fever, is an acute disease characterised by pyrexia and painful swellings of the larger joints.

This disease most frequently attacks young persons between the ages of ten and twenty-five years. It is due to a particular germ which is believed to gain entrance to the body



mainly through the throat and tonsils. Chill and exposure to cold and wet are often found to be predisposing causes.

*Symptoms.*—The disease commences with a feeling of general malaise accompanied frequently by sore throat. The temperature rises to a level of  $101^{\circ}$  to  $103^{\circ}\text{F.}$ , and severe pain is complained of in one or more joints. As a rule the larger joints are affected, i.e., knees, ankles, shoulders, elbows or wrists. The affected joint is extremely painful on movement, though not markedly tender to touch, and it is swollen, hot and red.

A characteristic feature of this disease is that the joints are not all affected at once. It is usual to find that, when the pain and swelling are subsiding in one joint, a similar condition is commencing in another.

Profuse excretion of sweat with a peculiar acidlike odour is common, and skin rashes are sometimes observed. The patient presents the usual symptoms common to all feverish states.

The disease lasts one or more weeks, the temperature subsiding when the joint pains cease.

Certain *complications* may arise, and these constitute the greatest danger in this disease.

Endocarditis (inflammation of the valves of the heart) and pericarditis (inflammation of the pericardium) are the commonest complications and occur in about half the cases. Another complication arising during the disease is hyperpyrexia ( $107^{\circ}\text{F.}$  or higher). Myocarditis (inflammation of heart muscle), pleurisy and chorea (St. Vitus dance) are also occasional complications.

*Treatment.*—The patient must be kept at rest in bed. As there is profuse perspiration, the clothing is best made of flannel, and the patient should lie between blankets in order to avoid the possibility of chill. The clothing should be easily removable for the purpose of sponging the body, as any movement of the inflamed joints is liable to cause very severe pain.

The affected joints are covered with cotton wool kept in place by a loose flannel bandage. Hot fomentations or soothing applications may be prescribed for the relief of pain. In some cases, to prevent painful movement, the limb may be put up in splints. Bed cradles must be used to prevent the bedclothing pressing on the affected parts.

The diet is similar to that described for other feverish conditions, and meat must be withheld until the patient has completely recovered.

The treatment of the complications mentioned will be found elsewhere. It should, however, be the nurse's constant duty to watch carefully for any indication of heart disease. Careful noting of the temperature is essential, and immediate steps must be taken to reduce it if it rises above  $104^{\circ}\text{F}$ . Hyperpyrexia is a dangerous and often fatal complication. Preparations should be made for giving a wet pack or cold bath, in the event of either of them being ordered by the doctor.

### **Chronic Rheumatism.**

Rheumatoid arthritis, or rheumatic gout, is a common affection of the joints occurring in elderly people, and usually referred to as "rheumatism", a term which includes a variety of conditions, many of which are due to poisons circulating in the blood or to some chronic focus of infection situated elsewhere in the body.

Several joints become stiff, swollen and painful, but one joint is often more acutely affected than the others. The appearance of symptoms is often closely related to weather conditions. Dampness and cold frequently bring on the attacks which may also affect the muscles (muscular rheumatism). After repeated attacks and as age progresses, there may be some permanent fibrous thickening and adhesions in the affected joints, causing deformity.

*Treatment.*—Local applications in the form of liniments, etc., are often prescribed, and sometimes treatment by "radiant heat" or Turkish baths is effective. Special restrictions of diet, principally of sugar and alcohol, will probably be enforced.

### **Myxoedema.**

In adults, deficiency in the secretions produced by the thyroid gland, or **hypothyroidism**, is responsible for the disease known as myxoedema. This disease is commonest in women, and makes its appearance usually about middle life. The actual cause of the diminished action of the gland is not known.

In infancy, thyroid deficiency produces the condition known as **cretinism** which is described elsewhere.

*Symptoms.*—The symptoms make their appearance very gradually and usually commence by the patient showing signs of lessened mental and physical activity. The skin becomes dry and scaly and appears thickened. The hair on the scalp and eyebrows becomes sparse, and what is left is coarse and brittle. There is puffiness of the eyelids, and thickening of the skin and subcutaneous tissues, giving the patient a dull and stupid appearance. The pulse rate is slow and may not be more than 40 per minute, and the patient shows a marked susceptibility to cold.

As the disease progresses there is evidence of progressive mental deterioration, and active mental symptoms in the form of hallucinations and delusions may appear.

*Treatment.*—The treatment consists of the administration of thyroid gland extract under the doctor's supervision. In the majority of cases, such treatment effects a complete cure, but the patient must continue to take thyroid throughout life.

### **Exophthalmic Goitre.**

Excess of thyroid secretion, or **hyperthyroidism**, gives rise to profound disturbance of the general health, and is usually accompanied by enlargement of the gland. This condition is known as exophthalmic goitre, or Graves' disease.

The disease usually commences between the ages of fifteen and thirty and is commoner in females.



*Symptoms.*—The main symptoms are as follows :—

- (i) Thyroid enlargement. This is always present at some stage of the disease, but may not be noticeable in the early stages.
- (ii) Exophthalmos or protrusion of the eyeballs.
- (iii) Rapid action of the heart. Palpitation and pulse rate up to 150 or more on the slightest exertion or emotional disturbance.
- (iv) Fine muscular tremors, particularly noticeable in the hands.
- (v) Disturbance of general health. The patient becomes anaemic, loses weight and shows signs of progressive weakness.
- (vi) Mental symptoms : depression, anxiety, and agitation ; in some cases alternating periods of depression and excitement.

*Treatment.*—The nursing requirements are limited to dealing with the symptoms as they arise, and the provision of adequate rest. The treatment of mental symptoms is dealt with elsewhere.

### **Anaemia.**

The term anaemia is used to describe a variety of conditions due to various alterations in either the quantity or quality of the blood.

It may be due to diminution in the number of red blood corpuscles, to deficiency of haemoglobin, or to changes in the white blood corpuscles.

• The most obvious physical signs are pallor of skin, lips and gums accompanied usually by loss of flesh, breathlessness and general debility.

## CHAPTER XXXV.

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### **INFECTIOUS DISEASES—THE ACUTE SPECIFIC FEVERS.**

GENERAL SYMPTOMS AND NURSING—TYPHOID FEVER—INFLUENZA—MEASLES—GERMAN MEASLES—SCARLET FEVER—DIPHThERIA — SMALL POX — VACCINATION — CHICKEN POX — MUMPS — WHOOPING COUGH — TYPHUS FEVER — PLAGUE.

The group of diseases known as the “Acute Specific Fevers” is so-called because each of them is believed to be caused by a particular or specific micro-organism.

All the diseases in this group can be transmitted from one person to another, either by contact or by means of infectious discharges or secretions, i.e., they are infectious or contagious. Further, an attack of any one of them renders the patient immune, for a longer or shorter period, from another attack. Each disease runs its own particular course and presents symptoms peculiar to itself, but there are certain general symptoms common to all.

#### **GENERAL SYMPTOMS AND SIGNS.**

General malaise accompanied by headache ; disordered digestive system (loss of appetite, thirst, foul tongue, constipation, etc.) ; increased pulse and respiration rate ; hot and dry skin which is sometimes followed by free perspiration and often accompanied by much prostration.

In the description of these diseases, the following terms are used to indicate the various periods or stages of the illness :—

**Incubation Period.**—This is the stage dating from the time the micro-organisms gain entrance to the body until the onset of the fever. During this stage, the micro-organism is rapidly multiplying in numbers.

**Period of Invasion.**—This commences with the onset of symptoms of fever, and may be sudden or gradual. The duration of the disease is calculated from the beginning of this stage.

**Period of Advance.**—At this stage, the disease is at its height and other diseases, or **complications**, may arise.

**Period of Decline or Resolution.**—During this stage, the symptoms begin to abate. They may terminate either suddenly (crisis) or gradually (lysis).

**Period of Convalescence.**—During this stage, the patient gradually returns to normal health, but certain **sequelae**, or after-effects, may occur.

When large numbers of people in one locality are attacked by a particular specific fever, the disease is called **epidemic** ; when it is widespread over the world (e.g., the outbreak of influenza in 1918) it is said to be **pandemic**. Isolated cases of an infectious disease appearing in an area generally free from the disease are known as **sporadic**. If a district always has a number of cases of a specific fever, the disease is said to be **endemic** in that district.

#### *General Nursing Treatment.*

The patient is isolated (except in certain instances mentioned later) in a separate room or in a special ward, and separate thermometers, feeding cups and other articles which come in contact with him are set aside for his use.

In most cases, the patient is kept in bed for a week or more after the temperature has fallen to normal. Special precautions must always be taken in order to avoid exposing the patient to chill, as this is a common cause of the more serious complications and sequelae.

As a rule the diet consists of liquids given at intervals of two hours, in quantities of about five ounces, until the temperature has fallen to normal, after which light diet is permissible ; this is followed by ordinary diet to which may be added special “ medical extras ”.



During the acute course of the illness, the temperature, pulse and respiration must be taken every four hours and duly charted. In the convalescent period, a morning and evening chart is sufficient.

The stools and urine must always be examined, and the latter tested for albumin at least twice weekly.

The nurse must attend personally to the disinfection of everything that is used by the patient, such as linen and crockery. The excreta and any discharges must also be disinfected. She herself must wear washable overalls, and on no account neglect to wash her hands regularly in disinfectant after every occasion on which she has handled the patient.

Nobody must be allowed to see the patient without special permission from the doctor, and visitors, when permitted, must be provided with overalls and forbidden to touch the patient or the bedclothing. On leaving, the visitors must discard the overalls and wash their hands in disinfectant.

*Disinfection.*—

- (1) Clothing and washable articles should be immersed in 1 in 20 carbolic for two to four hours and subsequently wrung out and sent to the laundry in specially marked bundles.
- (2) Feeding utensils, crockery, etc., may be disinfected by being placed in a bath of 1 in 20 carbolic for four hours, or boiled for one hour.
- (3) Stools and urine should be mixed with an equal quantity of disinfectant, and the receptacle covered with a cloth wrung out in disinfectant and left for two hours before disposal (1 in 20 carbolic or 5 per cent. formalin are commonly used for this purpose). Dressings, etc., contaminated by discharges, should be immersed in strong disinfectant or, preferably, burned.
- (4) The room or ward, after the recovery or removal of the patient, must be thoroughly disinfected by fumigation with a gaseous disinfectant, e.g., formalin or

sulphur. In order to prepare the room for disinfection, the clothing, bedding and other articles must first be spread out in order to expose them to the action of the gas, and windows, fireplaces and other openings must be sealed up. The apparatus for producing the gas is then set going and, finally, the door is closed and sealed.

- (5) After recovery, the patient should be thoroughly washed in a bath containing disinfectant before being allowed to mix with others.

## ACUTE SPECIFIC FEVERS.

### Typhoid Fever.

Typhoid fever, or enteric fever, is a specific infectious fever which runs a course of three to four weeks duration; it is accompanied by a typical ulceration of the small intestine. Typhoid fever is due to infection by the typhoid bacillus. Other micro-organisms, closely related to the bacillus of typhoid, are the cause of certain varieties of the disease known as **Paratyphoid A** and **Paratyphoid B**. The symptoms in these varieties are similar to those of typhoid, but are generally milder; the nursing treatment is the same.

Typhoid fever occurs fairly frequently in South Africa, and from time to time cases occur amongst the patients in mental institutions. Modern sanitary methods and improved preventative measures are tending, however, to reduce the number of cases. The disease most commonly attacks persons between the ages of fifteen and twenty-five years; it is rare in young children and the aged.

Before an individual contracts the disease, it is necessary for the micro-organism to be introduced into the alimentary canal.

The infection may be conveyed in water or ice, milk and uncooked foods, such as salads or ice cream, and by dust or flies. The discharges from the bowel and bladder of patients suffering from the disease contain the typhoid bacillus and are liable to transmit the infection unless due precautions are taken.

**Typhoid Carriers.**—Some individuals, after an attack of typhoid, may continue to harbour the bacillus and yet retain perfect health. The germ in such cases is usually in the gall bladder, from which it is from time to time excreted into the bowel. Such individuals, if undetected, are a constant source of danger to others, as they are actively infectious and may transmit the disease unless suitable measures are taken to prevent this. Under no circumstances should a typhoid carrier be allowed to work in a kitchen or assist in the distribution of foodstuffs.

Typhoid fever is rarely transmitted from one individual to another provided adequate precautions are taken in the disposal of all evacuations from the bowel and bladder and of soiled bedding or personal clothing. Strict isolation, such as is enforced with cases of small-pox, diphtheria, etc., is therefore unnecessary in nursing cases of typhoid fever.

The *incubation period* is from five to twenty-three days, usually about twelve days.

*Symptoms.*—The onset is slow and insidious. The patient complains of general malaise, chilliness and loss of appetite, and headache is often a prominent symptom. At this time, there is usually nothing to indicate the real nature of the disease except the temperature. The temperature rises in the latter part of each day, falling in the morning, but on each subsequent day the evening rise is higher and the morning fall less, until the end of the first week, when the disease is fully established. From about the fourth day after the onset, the diagnosis of typhoid may be confirmed by an examination of a specimen of the patient's blood.

The rash generally makes its appearance towards the end of the first week. It consists of small, rose-coloured spots, slightly raised and disappearing on pressure. These spots come out in crops which last a few days, and are usually found on the chest and abdomen. The rash is seldom a profuse one and can easily be overlooked.



During the second week, the temperature remains continuously high. The abdomen may become tense, swollen and tender. The stools are often loose with an offensive odour and because of their colour and consistency, they are described as “pea soup stools”. Diarrhoea is by no means a constant symptom, and in a number of cases constipation is present.

During this stage, the exhausting effect of the disease begins to be obvious. The patient becomes dull and drowsy and looks tired and worn out. In severe cases, the patient passes into what is known as a “typhoid state”, i.e., a state of semi-consciousness accompanied by sleeplessness and a muttering delirium. In this state the pulse is fast, feeble and irregular, and the respiration rapid and shallow. The tongue is dry and coated, and sordes collect on the lips and teeth.

During the third week, in favourable cases, the temperature begins to fall gradually, the symptoms subside and sleep returns.

During the earlier part of convalescence, relapses are liable to occur. These are usually less severe than the original attack, but sometimes prove fatal. It is during this stage that healing of the ulcers in the bowel takes place.

The more important *complications* which may arise during the course of this disease are as follows :—

- (i) Haemorrhage from the bowel. This is commonest during the third and fourth week. A sudden fall in temperature with a rise in pulse rate often indicates the occurrence of haemorrhage, which is subsequently confirmed by the presence of blood in the stools.
- (ii) Perforation of the bowel followed by peritonitis. This complication occurs usually from the third week onwards, and its onset is indicated by sudden sharp abdominal pain accompanied by symptoms of collapse.

- (iii) Meteorism, or excessive distension of the bowel with gas.
- (iv) Pneumonia or severe bronchitis.
- (v) Bed sores.

*Treatment.*—In order to protect the nurse from contracting the disease, she should be rendered immune by the administration of anti-typhoid vaccine. All “contacts” with the case should be similarly immunised. The stools and urine of an infected patient contain the bacillus and, unless properly dealt with, may spread the disease. The most effective method is to mix the stool and urine with sawdust and burn it. Usually, however, such a course is not practicable and it is then necessary to mix the stool thoroughly with disinfectant, e.g., carbolic acid or a cupful of unslaked lime to which hot water is added, and allow it to stand for an hour. On no account must a non-disinfected stool or urine be emptied down the closet. In the absence of water-borne sewage, the stools, after being disinfected, must be deposited in a separate bucket for special disposal. Soiled linen must be soaked in 1 in 20 carbolic for at least two hours before being sent to the laundry. Bed pans and urinals must be scalded each time after use. Vomit and sputum, if any, must be treated in a manner similar to that described for stools. Thermometers must be kept in methylated spirits or a solution of 1 in 20 carbolic.

The nurse must wear a washing overall which is left always in the sick room, and must carefully wash and disinfect her hands immediately after each occasion on which she handles the patient.

The main objects of the nursing treatment of typhoid are the maintenance of the strength of the patient, and the prevention of complications. These objects can be attained only by the administration of suitable nourishment in sufficient quantity and by keeping the patient absolutely at rest until at least a week after the temperature has fallen to normal.

Details regarding the diet will be specified by the doctor. Three to four pints of milk are usually given every twenty-four hours, in amounts of four to five ounces every two hours,

diluted with water. The patient should not be allowed more than ten minutes in which to finish the feed, in order that the milk may be digested before the next feed is due.

Other articles such as beef tea, fruit juice, ice cream etc., may be prescribed. The ulcerated condition of the bowel necessitates strict adherence to the diet prescribed, and under no circumstances must a nurse give even the smallest quantity of any foodstuff not permitted by the doctor. Such an indiscretion on the part of the nurse may cost the patient his life. Water may be given in unrestricted quantity, and the patient must be encouraged to drink as much as possible, as a plentiful intake of fluids helps in the excretion of toxins and adds to the patient's comfort.

The maintenance of absolute rest is often a matter of difficulty, when the patient suffers from mental disorder. It must be taken as a general rule that the patient is not to do anything for himself; he must not even turn himself in bed. Giving the bedpan, making the bed and washing the patient, etc., must be carried on with the utmost care and the minimum of effort on the part of the patient. To prevent the development of bed-sores, the patient should not be allowed to lie always on his back, but should be carefully turned on alternate sides about every two hours.

If the temperature remains persistently high, sponging, wet packs or cold baths may be given.

If constipation is present, on no account must any aperient be administered. The condition is usually relieved by an enema, and instructions should be sought from the doctor as to the type of enema to be used.

In every case, the patient's daily toilet is a matter of great importance. He must be carefully sponged all over both night and morning. The mouth must be carefully cleaned both before and after the administration of food.

Grave responsibility rests upon the nurse in dealing with typhoid fever, both with regard to the treatment of the patient and the prevention of the spread of the disease. She must



be able to recognise the symptoms indicating the onset of complications, particularly the two most important, viz., hæmorrhage from the bowel and perforation. Both these conditions are extremely dangerous to the patient, and immediate medical or surgical treatment is of the utmost importance.

### Influenza.

Influenza is an infectious disease which appears from time to time as a widespread epidemic. It may occur at any time of the year, but is commonest in the winter months. Infection is easily spread, either by direct contact or by air.

The *incubation period* is from one to four days. One attack does not protect the individual from another attack, except for a limited period.

*Symptoms.*—The onset is usually sudden, with fever, rigors, headache and vague pains referred to the back and limbs.

There are three types of the disease, all of which have a similar onset. These are :—

- (a) Respiratory type—with cough, sore throat and a tendency to bronchitis and pneumonia.
- (b) Abdominal or gastric type—with vomiting, diarrhoea and abdominal pain.
- (c) Cerebral type—with severe headache, pain in the back, great prostration with delirium or coma.

*Treatment.*—The fever requires treatment on general lines. The great danger of this disease is the severity of the complications which may follow even the mildest forms of influenza. It is therefore necessary to exercise the greatest care in every case to avoid chills, especially during the period of convalescence. The bronchitis and pneumonia associated with influenza are often of a severe type and, in some epidemics, are responsible for a very high death rate.

Every effort must be made to avoid the spread of infection. Patients should be isolated as far as possible and should be prevented from attending indoor meetings or entertainments until the possibility of their carrying infection has disappeared.

**Measles (Rubeola).**

Measles is an acute infectious fever accompanied by a typical rash. It is a common disease amongst children, and few escape it. One attack appears usually to confer immunity, and the disease is seldom seen in adults. The cause is a micro-organism although this has not yet been isolated.

The *incubation period* is from seven to fourteen days ; generally, however, it is about ten days.

*Symptoms.*—The stage of invasion lasts about four days and is the most actively infectious period of the disease. At the onset, there is a sudden rise of temperature up to 101° or 102° F. This pyrexia is accompanied by headache and all the symptoms of a common cold (running of eyes and nose, sneezing and coughing). Sometimes, during this period, small red spots with bluish centres, known as Koplik's spots, may be seen on the inner aspect of the lips and cheeks. The symptoms become more pronounced and the fever steadily rises. The patient, especially if a young child, may become delirious, or suffer from convulsions.

On the fourth day, the temperature may reach 104° F. or higher, and a typical rash appears. The rash consists of red and slightly raised papules which tend to group together into irregular patches. The spots first appear on the face and behind the ears, and gradually extend downwards over the trunk and limbs, appearing last on the lower extremities. The rash lasts from three to five days and then fades, leaving a brownish mottling of the skin. It is followed by a slight peeling of the skin in minute flakes which are much smaller than the peelings of scarlet fever.

The temperature remains high until about the sixth day, when, in a favourable case, it usually falls by crisis. After the fall of the temperature and the disappearance of the rash, the other symptoms slowly subside and, in the absence of complications, the patient is usually allowed up after the temperature has been normal for a week.

The principal *complications* which may arise are bronchopneumonia, bronchitis and middle ear disease.

*Treatment.*—On account of the danger of lung complications, it is highly important that the patient be kept warm and free from exposure to chill. A well ventilated room, rest and plenty of fluid nourishment are the main nursing requirements. An inflammatory condition of the eyes is common ; it is therefore necessary to protect the patient from bright light, and to prohibit reading until the acute stage of the disease has passed. The eyes may be washed with boracic lotion, and boracic ointment may be applied to the lids.

The infection is believed to be transmitted chiefly by discharges from the eyes and nose and, possibly, by the breath. The patient is usually kept in isolation for three weeks after the rash appears, or longer if all the discharges have not ceased by that time. Discharges from the mouth, nose and eyes should be wiped away with lint and burned.

The usual precautions in regard to disinfection must be rigidly carried out during and after the illness.

### **German Measles (Rubella).**

This is quite a distinct disease from measles. The incubation period is longer, being from seven to twenty-one days, and the rash appears earlier, usually about the second day. The *symptoms*, similar in many ways to those of measles, are not usually so severe and frequently, at the commencement, the glands in the neck are swollen.

This is also a disease of childhood, but sometimes occurs in adults.

The *treatment* is similar to that of measles.



**Scarlet Fever (Scarlatina).**

Scarlet fever is an acute infectious disease, the main features of which are high fever, sore throat and a typical rash. The micro-organism generally accepted as the cause of this disease is a certain variety of streptococcus. Infection is transmitted very readily, especially through the medium of the discharges from the nose and ears, the patient being infectious during the whole course of the fever and until the discharges cease.

The *incubation period* may be from one to eight days, but is usually three to four days.

*Symptoms.*—The onset of the fever is abrupt, and the temperature often rises to  $104^{\circ}$  or  $105^{\circ}$  F., while the pulse rate is extremely rapid. Other symptoms present at this early stage are vomiting, sore throat and headache. In very young children convulsions are not uncommon. At the end of the first or during the second day, the rash comes out. It appears first on the chest and neck and rapidly spreads over the body, extremities and face, the skin round the mouth usually escaping. It consists of a bright red, diffuse flush which, if carefully examined, is seen to consist of tiny red spots. During the first two or three days, the throat symptoms become worse, and the temperature remains high. The tongue is thickly coated with a white fur, through which the red papillae protrude (strawberry tongue).

In an average case without complication, the rash begins to fade about the fourth day of the illness and is usually gone by the end of the first week; the temperature falls by lysis, reaching normal about the middle of the second week.

Desquamation or peeling of the skin, often in large flakes, begins with the fading of the rash.

In the absence of complications, the patient is usually allowed up about a week after the temperature has fallen to normal, but remains isolated for at least four weeks from the appearance of the rash, or longer if the discharges have not ceased by that time.

The following *complications* may occur :—

- (i) Nephritis—the urine should be examined daily for albumin.
- (ii) Heart disease (pericarditis or endocarditis).
- (iii) Middle ear disease (otitis media).
- (iv) St. Vitus dance (chorea).
- (v) Arthritis.

*Treatment.*—This is similar to that of other infectious fevers already described. The usual precautions against the spread of the disease must be rigidly carried out. Particular care must be exercised in the destruction by burning of lint or rags used to wipe away discharges from the mouth, nose or ears.

There is no special curative treatment, but every effort must be made to prevent the occurrence and to notice the onset of any of the above-mentioned complications. Symptoms of nephritis and of heart disease must be looked for, and any complaint of earache will suggest the onset of middle ear disease, a condition necessitating prompt medical attention.

The nurse must constantly remember that direct contact is not the only means by which the disease is transmitted, but that it can be carried to others by people who have been in contact with the patient. Strict precautions must be taken to ensure that infection is not spread either by the nurse herself, or by visitors.

### **Diphtheria.**

Diphtheria is a specific infectious disease associated with the inflammation of a mucous surface (usually the throat), and the formation of a fibrinous membrane on the area affected. Children are more liable to be attacked than adults.

The micro-organism responsible for the disease has been isolated and is known as the Klebs-Loeffler bacillus. The *incubation period* is from two to ten days.

*Symptoms.*—The onset of symptoms is usually gradual. The patient complains of headache, soreness of throat, and pain in the limbs and back. The temperature is raised, but only to a moderate degree. The symptoms at this early stage may resemble those of an ordinary sore throat. The symptoms, however, become worse and the fever becomes more marked. On examination of the throat it will be found that patches of a thick greyish membrane, having the appearance of wet paper, appear on the tonsils, and that the area is red and inflamed. This membrane is fairly firmly attached and, if a portion is removed, the underlying tissue bleeds. The membrane extends in size and may spread to the back of the nose into the larynx.

When the larynx is involved, the patient's voice becomes husky and the breathing is obviously difficult ; in severe cases, particularly in infants and young children, there is grave danger of suffocation.

In some cases the toxin produced by the bacillus has a serious general effect, producing nephritis and liability to heart failure from degenerative changes in the kidney tissue and heart muscle. In other cases the toxin affects the nerves and may cause paralysis of :—

- (i) Soft palate—preventing the patient from swallowing liquids which return through the nose.
- (ii) Eye muscles—producing squint.
- (iii) Limbs—causing partial paralysis.
- (iv) Heart and muscles of respiration—often a fatal complication.

The paralysis usually clears up completely within a few months.

There is no rash in this disease. A moderate attack lasts about fourteen days before the temperature is normal. The termination is by lysis.

*Complications.*—Apart from the paralysis mentioned above, there may be severe haemorrhage from the throat, heart disease or kidney disease.



*Treatment.*—Isolation of the patient is necessary in either a separate room or ward. The micro-organism responsible for the disease is found in the membrane, and the disease can be transmitted by material expelled into the air during the act of coughing. In all her dealings with the patient, the nurse must avoid inhaling expired air from the patient's mouth and nose. It is considered advisable by some authorities that the nurse should wear plain glass spectacles to prevent the possibility of infection of the eye.

The precautions against the spread of infectious disease, by attention to feeding utensils, etc., must be strictly enforced. The nurse should in addition protect herself by frequent use of an antiseptic gargle.

All discharges must be wiped away with lint or other material and immediately burned.

For the treatment of the patient diphtheria anti-toxin is used. Injections of this serum lessen the severity of the symptoms and shorten the course of the disease. Since the introduction of this method of treatment, the death rate from diphtheria has been greatly reduced. Local applications in the form of sprays or gargles are also employed, and hot fomentations on the outside of the throat help to reduce discomfort.

The nurse must constantly be on the look-out for the onset of huskiness or difficult breathing, indicating the spread of the membrane to the larynx.

It may be necessary for the doctor to open the trachea below the obstruction, and insert a tube through which the patient breathes (tracheotomy). Alternatively, a tube may be passed through the mouth into the larynx. In the former case, the tube must be constantly kept clear by the nurse; in the latter, there is a distinct danger that the patient may dislodge the tube by coughing, when immediate medical assistance will be required for its re-insertion.

It is a wise precaution to have the instruments ready for the performance of tracheotomy in case of emergency. Fluid or semi-fluid diet is essential. In some cases, on account of difficulty in swallowing or a tendency to vomit, rectal feeding may be necessary.

Apart from attention to the local throat symptoms, the management of the patient's general condition is of great importance. The toxin of diphtheria has a weakening effect on the heart, and it is the nurse's duty, during the acute stage of the illness, to keep the patient absolutely at rest. Even in the mildest case, the patient should never be allowed to sit up in bed before the membrane has disappeared, and then only with the sanction of the doctor. Fatal heart failure may occur if the patient is allowed to get up too soon.

The usual methods of disinfection must be carried out after the patient's recovery.

### **Smallpox (Variola).**

Smallpox is a highly infectious and very virulent disease caused by a virus, as yet unidentified. Formerly it was as common as measles; nearly everyone was infected in early life, and the death rate was very high. Fortunately, it is now comparatively rare as a result of the widespread use of vaccination as a protective measure.

The *incubation period* is from ten to fourteen days.

*Symptoms.*—The stage of invasion is characterised by the sudden onset of high fever, often preceded by a rigor, and usually accompanied by headache, prostration, and severe pain in the back.

The rash appears on the third day, beginning on the forehead and wrists and spreading later to other parts of the body. The eruption at first consists of dull red spots, not raised above the surface, and hard to the touch, as if there were small shot under the skin. These soon develop into papules which change into vesicles. The vesicles later become pustules which finally rupture, forming crusts. In favourable

cases, at the end of a fortnight from the commencement of the illness, the eruption dries up and convalescence becomes established. When the scabs separate, permanent pitting or scarring of the skin is left behind.

The most important *complications* are pneumonia and bronchitis. The eyes may suffer severely.

*Treatment.*—Strict isolation is necessary until the last crust has separated. Special attention must be given to the skin; the patient may be sponged with dilute carbolic lotion to relieve the itching, which is often intense; or soothing ointments may be applied. The mouth must be kept thoroughly clean, and the eyes should be bathed frequently with boracic or other mild antiseptic lotion. All persons in contact with the patient must be revaccinated.

### **Vaccination.**

By vaccination is meant the inoculation of a human being with the virus of cowpox, thereby producing immunity against smallpox.

Inoculation is performed by scarifying the skin through a drop of vaccine lymph lying on the skin. The scratches are made superficially, so as not to draw blood, the usual site being the outer surface of the upper arm. Care must be taken to secure asepsis; the instrument used must be sterilised, and the skin thoroughly cleansed, first by washing with soap and water, and then with some weak antiseptic lotion, which in turn is washed off with sterilised water. When vaccination is successful, raised red papules develop at the site of the scratches after a period of three days. By the fifth day these have become vesicles, which attain their full development on the eighth day and thereafter become purulent, the surrounding skin being also inflamed. After the tenth day the pustules begin to dry up, forming crusts which separate two or three weeks after the date of the inoculation. Towards the end of the first week there may be slight fever, headache and general malaise. Undue inflammation in the area of vaccination is usually the result of sepsis.



*Treatment.*—Great care must be taken to keep the part clean. A pad of sterile lint or cotton wool should be applied, and some simple antiseptic dusting powder may be used later to assist the drying up of the vesicles. Should these rupture, the dressing must be changed at intervals.

It is advisable to keep the arm in a sling from the time the vesicles develop until firm scabs have formed.

The protection conferred by vaccination may disappear after a number of years, and re-vaccination at intervals of six or seven years is required to secure permanent immunity. Re-vaccination is advisable for anyone liable to be exposed to infection during an outbreak of smallpox.

### **Chickenpox (Varicella).**

This is a mild but highly infectious disease which superficially resembles smallpox, though caused by a different virus.

The *incubation period* extends from eleven to twenty-one days.

*Symptoms.*—The stage of invasion is usually ushered in by slight fever, which rarely becomes severe.

The rash, which appears within twenty-four hours, is often the first symptom. It consists of small rose-coloured papules which rapidly develop into vesicles, these soon drying up to form scabs. Unlike the eruption in smallpox, the spots appear first on the back, chest and shoulders, and only later on the face and limbs; further, they do not all appear at once, but come out in successive crops for several days.

The fever is generally of short duration, rarely extending beyond a week, and complications are exceedingly rare. The patient ceases to be infectious when the last scab has fallen off, but isolation for twenty-one days from the commencement of the illness is usually observed.

*Treatment.*—The ordinary precautions must be taken to prevent spread of infection. For the itching, which may be troublesome when the scabs are separating, dilute carbolic lotion or dusting powder may be applied.

**Mumps (Epidemic Parotitis).**

Mumps is an acute infectious disease, usually occurring in epidemic form, and characterised by inflammation and swelling of the parotid glands.

Infection is carried directly from one person to another. The *incubation period* is from twelve to twenty-six days, usually about eighteen.

*Symptoms.*—The stage of invasion usually begins with fever, followed in a few hours by pain, swelling and tenderness in one or both parotid glands. The patient has difficulty in opening the mouth and in swallowing; the pain may be severe, especially when food is taken, and temporary deafness may occur. During the course of the illness there is usually an irregular pyrexia, but fever may be absent.

Isolation is necessary for at least three weeks from the commencement of the disease, or, in prolonged cases, for a week after the swelling of the glands has subsided. Inflammation of the testes (**orchitis**) is the most frequent complication.

*Treatment.*—Hot fomentations or other local applications over the affected glands are required to alleviate the pain. The diet must be liquid as long as the glands are swollen, and care should be given to the cleansing of the mouth after food.

**Whooping Cough (Pertussis).**

Whooping cough is an infectious disease which occurs as a rule in epidemics and usually attacks young children. The patient is most infectious during the early stages of the illness, and infection is almost always transmitted directly from one person to another. The causal organism is known as Bordet's bacillus.

The *incubation period* is from five to eighteen days.

*Symptoms.*—The stage of invasion begins with slight pyrexia, and catarrh of the respiratory passages, accompanied by cough. After some days the cough becomes paroxysmal and is worse at night. The paroxysm consists of a large

number of short coughs, followed by a long-drawn stridulous or crowing inspiration—the characteristic “whoop”—due to spasm of the vocal cords. The attacks of coughing often end in vomiting. There is no fever during the paroxysmal stage unless complications are present, but the general health is affected, and the patient generally loses weight.

After six weeks the bouts of coughing steadily diminish in number and severity, and convalescence follows. The patient is isolated for four weeks after the onset, but may be removed from isolation sooner, provided the paroxysms have entirely ceased for at least fourteen days.

Broncho-pneumonia is the most important and serious *complication*. Digestive disturbances, convulsions, and bleeding from the nose may also occur, or even cerebral haemorrhage.

*Treatment*.—Chills must be avoided and, if fever is present, the patient must be kept in bed. In the paroxysmal stage, the diet should be light and easily digested, and every effort made to maintain the strength of the patient. If vomiting occurs frequently, food should be given after a bout of coughing. Camphorated liniment, rubbed on the chest, is often of value in lessening the severity of the spasms.

### **Typhus Fever.**

Typhus fever, or gaol fever, is an acute infectious disease which usually occurs in epidemics among persons living in insanitary and overcrowded areas. It is caused by a micro-organism, and infection is conveyed by lice, bed bugs, fleas and ticks.

The *incubation period* varies considerably, but is usually from seven to ten days.

*Symptoms*.—The onset is sudden and is generally accompanied by a rigor with headache and prostration. The temperature rises rapidly and remains high ( $103^{\circ}$  to  $105^{\circ}$  F.); the pulse is rapid and often becomes feeble in the later stages of the illness. The rash appears on the fourth or fifth day, in the form of red spots and a dark red mottling of the skin



(the so-called “ mulberry rash ”), chiefly on the abdomen and other parts of the trunk. The acute stage lasts for about fourteen days and, during the second week, there is often great prostration and delirium and sometimes coma. Termination, in favourable cases, is generally by crisis. Death may occur from exhaustion, heart failure, or broncho-pneumonia, which is a common *complication*. The patient is isolated during the period of the fever.

*Treatment.*—The patient is best treated in a room with free ventilation or in the open air. Absolute quiet and regular administration of liquid nourishment are essential. The mouth must be regularly cleaned, and a watch should be kept for distension of the bladder.

Stimulants are often necessary. Headache, when severe, may be treated by the application of cold compresses or an ice bag. After the temperature has returned to normal, the patient is likely to be in a state of considerable exhaustion, and heart failure may occur. Care must therefore be taken to guard against any over-exertion during the early stages of convalescence.

### Plague.

Plague is an acute infectious disease which usually occurs in epidemics. It is caused by a micro-organism, called the bacillus pestis, and the disease is usually conveyed to man by the bite of a flea from an infected rat or other rodent animal. The *incubation period* is from two to eight days.

*Symptoms.*—There are three forms of this disease, viz., the bubonic, septicaemic and pneumonic forms. In the **bubonic form**, the onset is sudden and is characterised by chill, headache, pains in the body and high fever, and prostration often develops rapidly. After one or two days the glands in the groin and axilla become inflamed and swollen and sometimes suppurate. The prostration increases and, in 70 per cent. of the cases, the disease ends fatally within a week.

The **septicaemic form** is the most virulent and the patient usually dies in a few days.

In the **pneumonic form**, the onset is sudden with rigors, fever and signs of pneumonia, and the termination is invariably fatal within three or four days. This form spreads rapidly from man to man by direct infection from the breath.

*Treatment.*—The destruction of rats and other rodents, and the examination of their bodies for bacilli, is one of the most important measures to be taken for the prevention of this disease. All persons who have been exposed to infection should be isolated for ten days. All infected clothing, etc., should be burned. A vaccine is used to confer immunity.

The patient must be isolated until convalescence has been well established, and special precautions must be taken in the pneumonic form to prevent infection.

## CHAPTER XXXVI.

### **INFECTIOUS DISEASES** (continued).

TUBERCULOSIS—LEPROSY—SYPHILIS—GONORRHOEA—  
DYSENTERY—MALARIA.

#### **Tuberculosis.**

This disease results from infection by a micro-organism, the tubercle bacillus. The infection may be local, i.e., confined to one organ or area of the body, or general. In the local forms, the lungs are most frequently involved (pulmonary tuberculosis), but the disease may attack any part of the body. In childhood, the bones, joints, glands and meninges are often affected whereas, in early adult life, the pulmonary form of the disease is more common. Those of more advanced years are less frequently attacked, although no age is exempt from infection. The disease is a widespread one and appears not only in human beings but also in animals.

#### *Modes of Infection :—*

- (i) By inoculation, e.g., contact with the discharge from tuberculous sores or with the sputum of a patient suffering from pulmonary tuberculosis.
- (ii) By inhalation of the tubercle bacillus in air contaminated by the coughing of patients with pulmonary tuberculosis. The tubercle bacillus is capable of living outside the body for a long time, especially in the absence of sunlight, and tuberculous sputum, which has dried and become mixed with dust, is a common source of infection.
- (iii) By ingestion, i.e., swallowing infected food such as milk or meat, or swallowing the sputum, as is common among the mentally disordered. In this latter case a patient suffering from pulmonary tuberculosis may infect other organs of his body. Feeding utensils used by tuberculous patients, unless properly disinfected, may also be the means of transmitting the disease to others.



## **Pulmonary Tuberculosis.**

Pulmonary tuberculosis, phthisis, or consumption, is common amongst inmates of mental hospitals and institutions for mental defectives. In order to understand the nature of this disease, the nurse should know the nature of the changes which take place in the infected lung.

The affected part of the lung becomes studded with small greyish deposits, the tubercles from which the disease gets its name. They are about the size of a pin head in the early stages, but gradually become larger and usually fuse together to form fairly large masses. The next stage is one where these tubercles become opaque and begin to soften in the centre, forming a cheeselike material. This process goes on until the broken down material is discharged, leaving cavities of various sizes. If one of these cavities involves a blood vessel, ulceration and rupture of the vessel wall frequently follow, causing haemorrhage (haemoptysis), which may be profuse.

*Symptoms.*—In the early stages of the disease, the symptoms are often vague and ill-defined. In institutions, where patients are weighed regularly, attention is often drawn to the condition by persistent loss of weight. This symptom may be accompanied by lack of energy, poor appetite and, sometimes, a troublesome cough. The temperature is likely to show a slight but regular evening rise. In suspected cases, the finding of the tubercle bacillus in the sputum is definite evidence of the disease, but several specimens may have to be examined before the germ is found. It is best to obtain a specimen for examination from sputum expectorated first thing in the morning.

As the disease progresses, the evening rise of temperature becomes more marked and there is a morning fall accompanied by copious perspiration (night sweats). The cough becomes more troublesome and the expectoration more profuse, and there may be occasional haemoptysis.

Later, there is a characteristic swinging temperature (the so-called " hectic fever ") with profuse sweats, rapid pulse and general prostration. At this stage, the bowel is often infected, causing a serious and intractable form of diarrhoea which further weakens the already exhausted patient.

The disease may be arrested by suitable treatment. In many cases, however, it is slowly progressive and terminates fatally after a few years. Sometimes the disease runs a very rapid course, the patient dying three to six months after the onset. Death usually results from general wasting, serious haemoptysis, or the occurrence of some complication. The severity of the infection can usually be gauged by the degree of pyrexia, and the variation between morning and evening temperature. Disappearance of fever and increase in weight are favourable signs.

*Treatment.*—The utmost care in the management of such cases is necessary in order to prevent the dissemination of the disease by one or other of the modes of infection described above. The value of isolation of infected patients is to a great extent lost by careless nursing, and every means for preventing the spread of infection must be adopted. This involves the disinfection of clothing and bedding ; these should be soaked in 1 in 20 carbolic for two hours before being sent to the laundry. All utensils used by the patient should be kept for his use only and disinfected at regular intervals. It should also be borne in mind that the act of coughing may forcibly expel small particles of infected mucus ; the nurse must therefore wear an overall whilst attending to such patients and disinfect her hands afterwards. Dusting and sweeping of the room or ward must be done with a damp duster or mop, in order to prevent the dissemination of infection by contaminated dust.

Some mental patients may be provided with a covered sputum flask containing disinfectant, but, in the majority of cases, this preventive measure is impracticable, or even dangerous. If sputum is accidentally deposited on anything in the room it should be wiped up and burned and the place where it fell should be washed with disinfectant.



In institutions, tuberculous patients are sometimes treated in special wards which enable the occupants to obtain a maximum of fresh air and sunlight, or they may be accommodated on wide stoeps, and their beds moved out into the open during the day as weather conditions permit.

For patients with fever, rest is bed in required ; when the fever subsides, graduated exercises may be beneficial.

The feeding of tuberculous patients is a matter of great importance, and the nurse will often have to exercise considerable skill and ingenuity in order to persuade the patient to take a sufficiency of the right type of food. The digestion in such cases is apt to be impaired, but as a general rule a liberal and nourishing diet is given which should include fats in the form of milk, butter, etc., within the limits of the patient's digestive capacity ; cod liver oil or some similar preparation is often prescribed.

During the course of the illness the nurse may be called upon to treat a variety of symptoms such as cough, pain in the chest, pyrexia and sweating. The management of these conditions has been dealt with elsewhere.

**Haemoptysis** is one of the most serious complications, and demands immediate action on the part of the nurse pending the arrival of the doctor. The patient must be placed in a recumbent position with head and shoulders raised. Cold compresses or a light icebag should be applied to the chest, and small pieces of ice given to suck. The usual symptoms of haemorrhage will be present, namely, pallor, faintness and feeble pulse. The patient may have to be treated for collapse, but stimulants must be avoided. The diet should be limited to cold, semi-solid or liquid food for at least forty-eight hours after the cessation of haemorrhage.

### **General Tuberculosis.**

When the tubercle bacilli gain entrance to the blood stream from some existing tuberculous lesion, numerous secondary lesions may appear all over the body. This condition, which is known as **miliary tuberculosis**, may be acute



or chronic. The acute condition is one of extreme severity, and is usually fatal. The symptoms depend on the organs attacked, but are usually those of a profound general infection.

The general management of such cases is similar to that described for pulmonary tuberculosis.

### **Leprosy.**

Leprosy is a chronic disease caused by infection with a specific bacillus. It affects chiefly the skin, nerves and mucous membranes. It is endemic in certain countries particularly India, China and the continent of Africa.

*Symptoms.*—There are two forms of the disease, namely, the nodular or tubercular and the anaesthetic or nerve form. A patient may suffer from only one form or from both.

In the **nodular or tubercular form**, after a period of general ill-health and, sometimes, slight fever, red patches appear on the skin of the face and other parts and, later, the skin of these parts becomes thickened and raised above the surrounding surface. The original patches may fade but fresh crops continue to appear and, after some time, the skin, particularly of the face, becomes studded with nodules which cause disfigurement and give a leonine or lion-like appearance to the face. The mucous membrane of the nose, throat and larynx may also become involved. This form of the disease continues to progress and usually ends fatally after some years.

The **anaesthetic or nerve form** begins with the appearance of scattered areas in which the skin is pale from loss of its pigment. These areas are patchy and asymmetrical and they tend to enlarge and to increase in number. The affected skin is often insensitive to touch except at the circumference of the patch, where there is sometimes a red margin which is hyperaesthetic. The disease progresses, and examination reveals that sensation for pain and touch is lost in various parts of the body and that many of the superficial nerve trunks are thickened. Muscular weakness and paralysis supervene, and contractures and various trophic changes occur in the parts

affected. The fingers and toes become dry and shrivelled, and the phalanges of the hands and feet may ultimately become separated from the rest of the limbs and drop off, or larger parts may become separated. Perforating ulcers occur, and the hair of the eyebrows is usually lost. The anaesthetic form may continue for many years. The activity of the disease may ultimately become arrested; the patient survives but the deformities remain.

*Treatment.*—Leper patients are segregated in colonies to prevent spread of the infection. The discharges should be destroyed and clothing disinfected and the nurse should take precautions to protect herself. The disease is treated by the administration of preparations of chaulmoogra oil.

### **Syphilis.**

This is a contagious disease due to infection by a micro-organism (*spirochoeta pallida*); it may be congenital or acquired.

#### **Congenital Syphilis.**

In this type the disease is transmitted from parent to offspring, and exists before birth.

#### **Acquired Syphilis.**

This is usually a venereal disease, i.e., the person is infected during sexual intercourse. Infection may be caused in other ways, for example, by contact with a syphilitic sore or discharge from a syphilitic patient. Primary syphilitic lesions are sometimes found on the finger through contact with a syphilitic sore, or on the lips from kissing.

In acquired syphilis, the disease runs a more or less definite course consisting of an incubation period of about twenty-one days, and three stages, primary, secondary and tertiary.

**Primary Stage.**—The main symptom of this stage is the appearance of a typical sore (primary sore or chancre) at the site of infection. The chancre begins as a small papule which slowly increases in size and becomes hard at its base. The

surface of the chancre is greyish red in colour, and there is usually a slight watery discharge from it. In the female genitals, the primary chancre commonly appears in the form of an ulcer. When the chancre is on the genitals, the lymphatic glands in the groin become enlarged (syphilitic bubo), but are not painful. The chancre itself does not respond to local treatment, but, under modern anti-syphilitic treatment, it rapidly disappears, usually leaving a permanent scar.

**Secondary Stage.**—In a case not arrested by treatment, this stage appears from five to six weeks after the appearance of the primary chancre. It commences usually with a feeling of general malaise and sore throat accompanied by slight pyrexia. Rashes of various types may appear on the body and limbs, seldom on the face. The rashes are symmetrical, i.e., they occur on corresponding areas on both sides of the body, and in the later stages they tend to become “coppery” in colour. The throat, palate and pharynx may show ulceration, which is described as “snail track” in appearance. Inflamed swollen areas (condylomata) may appear on the mucous membranes of the mouth, nose and anus, and the vulva in women. Many other symptoms may develop during this stage, such as syphilitic warts on the mouth, genitals or anus, or inflammation of the ears, eyes, bones, etc.

**Tertiary Stage.**—This stage usually appears about three years after infection, but may appear much later in cases in which treatment has been given. On the other hand, it may be absent altogether when the disease has been effectively treated in its early stages. In this stage, the syphilitic lesion known as a **gumma** may appear. A gumma is a greyish looking growth which tends to soften or undergo necrosis in the middle. Gummata may appear in any part of the body and cause symptoms of disease of the organ affected. General paralysis and locomotor ataxia may appear in the late tertiary stage, some years after the original infection.

The symptoms of acquired syphilis have been dealt with in some detail in order to assist the nurse in detecting a condition which is always serious for the patient, and which



demands immediate medical attention. Furthermore, it is very contagious during the primary and secondary stages, and strict precautions should be taken by the nurse to prevent the infection of herself and others. The doctor will usually administer treatment in the form of arsenical intravenous injections, and mercury may be given by the mouth or in the form of an ointment to be rubbed into the skin.

### **Gonorrhoea.**

This is a venereal disease, caused by infection with a micro-organism (gonococcus). Infection results in a discharge of a purulent type from the urethra of the male, and the vagina of the female. Infection is usually transmitted by sexual intercourse, but is sometimes conveyed in other ways. The condition usually clears up after local antiseptic treatment. In some cases the infection may spread and cause such conditions as gonorrhoeal arthritis, or various forms of disease of the genito-urinary tract. In men it may be followed by stricture of the urethra.

An acute and dangerous inflammation of the eye, sometimes terminating in blindness, may be caused by infection of the conjunctiva by the gonococcus. Great care must therefore be taken to avoid the spread of infection by the hands or articles such as towels which have been contaminated by contact with the discharge.

### **Dysentery.**

Dysentery is the term used to signify an inflammatory condition with ulceration of the large bowel, accompanied by frequent evacuations containing blood and mucus.

The disease occurs in two varieties :—

- (a) *Bacillary Dysentery* caused by the bacillus of dysentery.
- (b) *Amoebic Dysentery* caused by a single-celled organism, the amoeba of dysentery.

The two varieties of the disease show similar symptoms and can only be distinguished with certainty by microscopic examination of the stools. The medical treatment of bacillary

dysentery differs from that of amoebic dysentery, but this does not affect the nursing management, which is the same for both. The disease appears from time to time in institutions, and is usually of the bacillary type, although the amoebic form also occurs. In either case infection is liable to spread rapidly unless the strictest nursing precautions are observed.

Infection is conveyed by carriers, contact with infected material (dirty linen or bedpans), dust of dried faeces and, possibly, by food contaminated by flies.

*Symptoms.*—After an incubation period of about two days the disease usually begins suddenly, with diarrhoea and colic. There are frequent calls to stool accompanied by much pain and griping. The actual passing of the stool gives little or no relief, and the straining continues—a symptom known as **tenesmus**. The stools may consist almost entirely of mucus and blood. The condition is frequently accompanied by a moderate fever, but the temperature may be sub-normal. In severe cases, the pulse becomes rapid and feeble, there is great thirst, and a state of exhaustion rapidly supervenes.

In cases which respond to treatment, the blood and mucus disappear after some days, and the patient may pass sloughs, i.e., portions of the lining membrane of the bowel loosened by the ulceration, these usually having a very offensive odour. The condition may become chronic.

*Treatment.*—Confinement to bed is essential during the acute stage. The diet must consist solely of liquids and these should be given in small quantities. In the early stages milk may be withheld, but barley water, albumen water, rice water or chicken broth may be given. As the condition improves, the patient may be allowed to have semi-solid milky food and, later, solid diet. Stimulants should always be at hand in case of threatened collapse. Fomentations or an ice-bag may be ordered for application to the abdomen.

Careful disinfection of stools is of prime importance, and no case should be considered free from infection until convalescence has been established for at least three weeks. Bedpans and chambers used by infected patients should

contain a small quantity of disinfectant. Clothing and bed-linen must be disinfected in the usual way before being sent to the laundry. The nurse must always wash her hands thoroughly in some antiseptic lotion after attending to the patient.

**Relapses** are common in patients who have suffered from dysentery. The symptoms in subsequent attacks are often slight and may be overlooked unless the nurse is specially observant. Recurrences of this nature are nevertheless highly infectious and, if not promptly treated, are a serious menace to the health of others.

On account of the gravity of this disease and the readiness with which infection may spread, every case of acute diarrhoea should be treated by the nurse as one of dysentery until such time as medical investigation indicates that the case is non-infectious.

### **Malaria.**

This is a disease which is endemic in certain regions. It is caused by the infection of the blood with certain parasites which penetrate the red corpuscles of the blood and destroy them.

The disease is conveyed from one person to another through the medium of a special kind of mosquito (the genus *Anopheles*).

When a mosquito of this type sucks blood from a person suffering from malaria, it becomes infected with malarial parasites and may, by biting other persons, transmit the infection to them by inoculation.

*Symptoms.*—The disease is characterised by paroxysms of fever of variable duration which occur periodically at regular intervals according to the particular type of parasite present. The paroxysms begin suddenly with a rigor, or cold stage, which is followed by a hot stage lasting some hours, after which the patient sweats profusely and the fever abates. The disease is accompanied by anaemia, enlargement of the spleen and progressive debility.



*Treatment.*—The preventive treatment consists chiefly of measures to exterminate mosquitoes and to check their propagation, by drainage and the eradication of collections of water in which they breed. In infected areas the windows and doors of houses should be covered with screens of fine wire mesh, and mosquito curtains used to surround beds. In regions where the anopheles mosquito is found, patients suffering from malaria should be protected from these insects in order to prevent the spread of infection to others.

Quinine is used in the treatment of this disease. This drug has a specific action in malaria and destroys the parasites when they are free in the blood stream. It is usually given with this object in large doses before the paroxysm is expected and during the fever, and is continued in smaller doses for some weeks after the attack has subsided.

During a paroxysm of fever, the patient should be made as comfortable as possible; in the cold stage, extra bed-clothing and hot-water bottles are used, and in the hot and sweating stages the patient may be sponged with tepid water. Stimulants may be needed if collapse occurs.

## CHAPTER XXXVII.

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### COMMON INTERNAL PARASITES.

THREADWORMS—ROUNDWORMS—TAPEWORMS—  
BILHARZIASIS.

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#### Intestinal Parasites.

The **Threadworm** (*Oxyuris vermicularis*) is probably the commonest of all internal parasites. Its presence is associated with considerable itching around the anus, and in children, whom it chiefly affects, there are usually signs of irritability and restlessness.

The worms inhabit the rectum and large bowel, and can be seen by the naked eye in the recently passed stools of infected persons. They appear like numerous small white threads from a quarter to half an inch in length, and can be seen wriggling in the stool.

The **Roundworm** (*Ascaris lumbricoides*) is most commonly found in young children but adults are by no means exempt. These worms resemble the ordinary earth-worm in appearance, measuring as a rule from six to eight inches in length, but sometimes up to a length of twelve inches. The body is cylindrical and pointed at both ends, and the colour is usually yellowish or dirty white. This worm inhabits the small intestine. Its presence may not be suspected until it is passed either in the stool or in vomited material.

The commonest symptoms associated with its presence in children are restlessness, irritability and occasional distaste for food, and sometimes mild convulsive attacks or other nervous disorders.

**Tapeworms** are most commonly found in adults. They are usually introduced into the human body by the eating of imperfectly cooked infected meat or pork. The parasite lives in the bowel, where its presence gives rise to a variety of symptoms, such as indefinite abdominal pain, capricious appetite, anaemia, and general debility.

This type of worm may measure up to twenty-seven feet in length. As the name indicates it is white, flat and tapelike in shape. The head is extremely small, not much larger than the head of a fair-sized pin. The body of the worm is made up of segments about half an inch long and a quarter of an inch wide. Numbers of these segments, when fully developed, are passed in the stool, and it is often through their presence there that the existence of the parasite in the patient is discovered.

The *treatment* for these internal parasites consists of the administration of certain drugs to kill and remove the parasite, after the patient has been suitably prepared for this treatment. In the case of tapeworm, all stools passed during treatment must be minutely examined for the head of the worm, because, unless this is passed, the worm will grow again.

### **Bilharziasis.**

This is a disease caused by the invasion of the body by certain types of parasites, one form of which, *bilharzia haematobia*, deposits its ova or eggs in the pelvic veins and mucous membrane of the bladder, and another, *bilharzia mansoni*, in the veins of the rectum. The disease is prevalent in Egypt and certain parts of South Africa. The embryonic form of the parasite develops in certain species of snails which are found in ponds, pools and collections of fresh water. The parasites are discharged from the snails and gain entrance to the human host by burrowing through the skin of a person bathing in the contaminated water; a person may also be infected by drinking the water.

The form which invades the urinary system causes cystitis and the passage of blood in the urine; the other form which attacks the rectum causes diarrhoea with the passage of blood and mucus.

In order to prevent infection, bathing in water in localities likely to be infected should be avoided, and the water should not be drunk until it has first been sterilised. The disease itself is treated by intravenous injections of antimony tartrate.



## CHAPTER XXXVIII.

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### SLEEP AND ITS DISORDERS.

SLEEP—INSOMNIA—DREAMS—SOMNAMBULISM—  
HYPERMOMNIA.

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#### Sleep.

Sleep is a normal periodical state during which consciousness is wholly or partly abolished, the voluntary activities of the body are suspended, and the conscious part of the mind is at rest. It recurs regularly about every twenty-four hours and its function is apparently to restore bodily and mental energy and to provide an opportunity for the elimination of the accumulated products of fatigue.

During sleep there is diminished activity of the cells of the cortex of the brain. Although many theories have been advanced to explain the nature of this state, the evidence in support of them is insufficient and our knowledge of the cause of sleep is incomplete. Anaemia of the brain is apparently a condition which is associated with sleep and it has been observed to occur during sleep in animals or persons who have been trephined ; the vessels of the retina are also depleted of blood in the sleeping state. It has been suggested that sleep may be due to the retraction of the dendrites of the nerve cells of the brain from contact with one another. The alleged narcotic effect of the accumulation of waste products, such as carbon dioxide, in the blood is another condition to which sleep has been ascribed.

The duration of sleep, or the amount needed, varies. An adult requires on the average about eight hours in the twenty-four, but there are wide individual variations. Infants during the first year should sleep for twenty hours out of the twenty-four. Children need ten to fourteen hours according to their age, and about six hours are sufficient for old people.

In the sleeping state, the muscles are relaxed, the pulse and respiration rates are slowed, and the blood vessels of the skin dilate ; the body temperature usually falls. Sweating is increased, but other secretions are diminished and the process of digestion is retarded.

The chief disorders affecting sleep are insomnia or sleeplessness, hypersomnia or excessive sleep, dreams and nightmares, somnambulism and night terrors.

### **Insomnia.**

Insomnia, or sleeplessness, varies in degree. In addition to the duration, the quality of the sleep obtained is important and should be taken into consideration. Sleep may be light or sound, calm or disturbed. The patient's statements as to the amount of sleep he has had are not always reliable, and many who imagine that they have not slept at all during the whole night may have actually enjoyed long periods of sleep.

The causes of insomnia are numerous and varied. It may be due to external conditions, to bodily disease not connected directly with the brain, to some condition directly affecting the brain or its blood supply, or to mental disorder.

The commonest external causes of sleeplessness are an uncomfortable bed, insufficient or excessive bedclothing, coldness of the extremities, too bright illumination of the dormitory, noises and disturbances, bad ventilation and other conditions which give rise to discomfort or irritation. The most important cause associated with bodily disease is pain ; cough, vomiting, diarrhoea, indigestion, pruritus or itching, and frequent micturition are also conditions which interrupt and interfere with sleep. Insomnia may be due directly to some condition of the brain such as congestion or interference with the blood supply in disorders of the circulatory system. Poisonous substances circulating in the blood, such as those produced in gout or intestinal fermentation, or the toxins of infectious disease, may also affect the brain and keep the patient awake ; tea, coffee, and tobacco may have a similar effect.

Insomnia is one of the most common symptoms in states of mental disorder and it is frequently an early or premonitory one. It is usually prominent in mania, the patient being too restless and busy to sleep, and also in states of depression in which anxiety and absorption in distressing ideas may preclude repose. Insomnia, which is often a persistent symptom in old people, is probably due to organic changes in the brain and the circulatory system.

*Treatment.*—Insomnia is a serious disorder and its successful treatment depends very largely on the efficiency of the nurse. In mental disorder, lack of sufficient sleep and rest may delay or even prevent recovery, and, in some acute cases, it is often the most important factor in producing a state of exhaustion which may end fatally.

The object of the treatment of insomnia is to enable the patient to regain the habit of natural periodical sleep of adequate duration without the aid of hypnotic drugs. In carrying out measures to attain this end, the nurse will find ample scope for the exercise of her qualities of common sense, tact and initiative. A nurse who does her work quietly and efficiently, who anticipates a patient's wants and does not irritate him by unnecessary fussing, will inspire confidence, and help to produce the atmosphere of peace and tranquillity which promotes sleep. She must administer, with care and intelligence, any treatment prescribed, but it is not always possible for the doctor to anticipate the needs of every patient during the night, and it is therefore necessary for the nurse to exercise discretion and common sense in carrying out his instructions. The writer has known of a patient being awakened out of a sound sleep in order to be given a sleeping draught because the doctor had ordered one to be administered at a certain hour !

In some cases of insomnia, particularly those in which the illness is acute and recent, a detailed record of the patient's sleep should be kept on a chart designed for the purpose. The entries on the chart should, of course, be based on the nurse's observations and not on information supplied by the patient.







Putting the patient to bed at the same time every evening, and darkening the room, helps to encourage a habit of regular sleep. Fresh air and exercise during the day have a beneficial effect in promoting sleep and patients should be in the open air as much as possible. Excitement and work shortly before bedtime should be avoided, and relaxation and quietness for an hour or so before retiring should be obtained. Some patients sleep better if they have a glass of hot milk or some nourishment before retiring. Strong tea and coffee should be avoided and, with many patients, it is necessary to limit the diet of the evening meal to only light and easily digestible foods. The bladder and the bowels, if necessary, should be emptied before going to bed. A warm or hot bath or a hot foot bath before retiring has a soporific effect in many cases ; others may sleep better after a cold douche. In fevers, tepid sponging soothes the patient and helps to procure sleep.

A prolonged warm bath may be ordered when excitement is present and is one of the most effective methods of treating sleeplessness due to this condition.

The dormitory or room should be fresh and well ventilated and the lights dimmed or shaded. The bed should be comfortable and the bedclothing must not be tucked in so tightly at the bottom that it presses uncomfortably on the feet. The bedclothing should be light and warm and a sufficient number of blankets must be provided in cold weather. Coldness of the feet is a frequent cause of persistent wakefulness and a hot-water bottle at the bottom of the bed will often enable a patient to get off to sleep.

Massage before or shortly after going to bed may induce sleep in some cases. It is used in the form of light stroking of the body and limbs ; the forehead may be gently stroked, and brushing the hair is sometimes helpful.

The night nurse must be careful not to awaken and irritate patients by making unnecessary noise and disturbance, e.g., by slamming doors, rattling keys, and tramping heavily about the room and passages.



Sleeplessness caused by pain, headache, cough, diarrhoea, or vomiting is dealt with by treatment of the primary disease, but drugs and local applications may also be necessary to alleviate the pain or other symptoms.

Patients who are in the habit of going off to sleep quickly and afterwards waking in the small hours of the morning may often drop off to sleep again after they have been given some light nourishment such as warm milk and a biscuit.

If the measures described fail to procure sleep, it may be necessary to resort to hypnotic or sedative drugs. Although these may relieve the condition temporarily they sometimes have other effects which are harmful, and some of them tend to make the patient dependent on the drug and to establish a habit.

The nurse must never give hypnotic medicines without the doctor's permission, and she must carefully observe the instructions regarding their administration. When such drugs are given, she should record any mental or bodily effects which appear to be caused by them, the period which elapsed before sleep was induced, the duration and nature of the sleep obtained, and the after effects, if any, which appeared to be caused by the drug.

Numerous drugs are used for their hypnotic effect and they may be given by the mouth or rectum, or subcutaneously. Their action and effects vary. Paraldehyde, a liquid with a pungent taste and odour, is probably given most frequently ; it acts quickly, but its effect soon passes off. Sulphonal does not produce sleep until about three hours after its administration, and it should therefore be given some hours before bedtime. It is supplied in the form of powder or tablets and, as it is insoluble in cold liquids, it is often given in solution in a glass of hot milk. If continued for long periods without intermission, it may cause poisoning accompanied by red discolouration of the urine, which should be regularly observed when patients are having this drug. Opium is given in various forms ; it relieves the pain of inflammation and has a sedative

effect ; it also causes obstinate constipation, and its prolonged administration tends to establish a habit. Chloral acts quickly but is poisonous and tends to weaken the heart ; it is useful if required for only a few nights and is often combined with bromides. Veronal helps to prolong the duration of sleep ; it is poisonous to some individuals, and its administration is sometimes followed by a state of confusion or by an erythematous rash.

### **Dreams.**

Dreams are apt to occur in states of impaired consciousness such as sleep. In a dream, imaginary scenes and impossible situations are presented to the mind, and the person may undergo fantastic experiences, but their absurdity and incongruity are not appreciated because the faculties of reasoning and judgment are temporarily out of action. Sensations caused by the pressure of the bedclothing or by digestive disorders may be misinterpreted during the partial unconsciousness of sleep and may thus give rise to dreams. Dreams are also regarded as manifestations in a distorted form of past experiences or of wishes, conscious or unconscious, which have been repressed because they are not acknowledged and cannot be accepted by the conscious mind.

**Nightmares** are dreams which are associated with a feeling of anxiety and helplessness, and the person often wakes in a distressed and agitated state.

### **Somnambulism.**

Somnambulism, or sleep-walking, is a condition of mental dissociation and automatic behaviour occurring during sleep while the person is not fully conscious of his surroundings. In this state he behaves as if he were in different surroundings and may perform complicated actions without being aware of what he is doing. Injuries, caused by falls or other accidents, are sometimes sustained by a person in a state of somnambulism.

**Night terrors** occur usually in so-called nervous children. The child goes to sleep as usual, but afterwards suddenly wakes up in a state of terror and screaming with fear. After

the attack is over, he does not wake and he has little or no recollection of the occurrence on waking in the morning. The condition is associated with disorder of carbohydrate metabolism and is treated by giving glucose or sugar.

### **Hypersomnia.**

Hypersomnia, or excessive sleep or drowsiness, occurs in various conditions. It is often a prominent symptom in epidemic encephalitis or "sleepy sickness"; in this disease the sleep rhythm may be inverted, the patient being drowsy during the day and restless at night. In "sleeping sickness", a different disease, which is caused by infection with a parasite and is endemic in Central Africa, the patient shows a constant and increasing tendency to sleep. The disease usually ends fatally. Abnormal drowsiness also occurs in cases of increased intracranial pressure and after an epileptic fit. Patients suffering from myxoedema, cretins, and some low grade defectives are often dull and sleepy, and drowsiness is sometimes an indication of impending uraemia or diabetic coma.

**Narcolepsy** is a condition characterised by the occurrence of sudden paroxysmal attacks of sleep of variable duration which interrupt whatever the patient is doing at the time. It is seen in cases of organic brain disease and in hysteria.

Epileptic fits and apoplectic attacks may occur during sleep. The former condition may be overlooked if the patient has no fits during the day; a history of bed wetting is sometimes an indication that a patient has fits during the night.





# **PART IV.**

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## **ELEMENTARY PSYCHOLOGY.**

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### **CHAPTER XXXIX.**

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#### **METHODS AND FIELDS OF PSYCHOLOGY.**

By the time the nurse begins to read this chapter she has probably read in the press something about psychology and also heard the subject discussed a good deal. It has become popular. The reason for this is twofold. Firstly, psychology describes its facts by names which occur in the vocabulary of everyday life, e.g., feeling, sensation, thought, impulse, desire. Its terminology is the property of everybody. Secondly, the importance of psychology has become widely recognised in practically all the undertakings of modern life. Thus the merchant in advertising his wares concentrates on gaining the attention of the reader ; the employer of labour studies the best means of gaining the goodwill and co-operation of his employees ; the teacher realises that he must understand the mental make-up of the pupil if he is to get the maximum results.

Interest in psychology, however, is not new. The ancients identified all mental life as the activities of the soul, and the term, psychology, is derived from two Greek words meaning the science of the soul. The soul was regarded as something apart from the body, having a separate existence before and after death and not perceptible to the senses. This conception of the soul or mind prevailed in more or less unaltered form until comparatively recently, when the subject of psychology was raised from the level of speculation to the level of scientific experiment.

Psychology may be defined as the science of mental life. Since conduct is the practical manifestation of mental life, psychology has also been defined as the science of human behaviour. Such behaviour must, however, be regarded in its widest sense, ranging from the simplest to the most complex actions ; from such a simple act as lifting a pencil from the table to making a brilliant public speech.

### **The Methods of Psychology.**

It is from the study of an individual's behaviour that we obtain an insight into the working of his mind. His work, his play, his deportment, his language will reveal his mind to us. This method of gathering information concerning the mental life of a person by observation is called the **objective method**.

Another method of obtaining information is by introspection, that is, by the individual observing his own activities. This method is known as the **subjective method**. In the objective method, the activities are observed by someone else ; in the subjective, by the individual himself. We gain information in the latter instance by questioning him directly.

Recently great progress has been made in studying certain mental processes by the **experimental method**. To-day we possess delicate instruments for this purpose. For instance, it is well known that an embarrassed person is inclined to blush, and instruments employed in psychological laboratories have revealed to us that this is due to circulatory changes that occur in the body with most mental processes. Again, individuals vary as regards the time taken to respond to a stimulus and arrive at a decision, e.g., to avoid an accident by putting on the brake when driving a motor-car, and this period, the reaction time, can be accurately measured.

Lastly there is the **genetic method**. This studies the development of behaviour. The mental life of the individual is traced from its beginnings to maturity. This method has been of particular use in the study of individuals whose behaviour has shown some abnormality. Take a boy who has been guilty of repeated delinquent acts. He is not only



examined as to his present mental condition, but his parentage and antecedents are enquired into; the treatment he has received in infancy and childhood, and his reactions thereto, are ascertained; a record of his state of health from birth is obtained, as well as a history of his school life; and his behaviour is studied in the light of all the facts thus gathered.

### **Fields of Psychological Study.**

**Animal Psychology.**—The study of animal behaviour has thrown much light on human behaviour. It has made clearer to us the nature and purpose of mental life. It has made clearer to us the foundations of human nature by displaying, in simple form, modes of activity among animals which, in the human being, are complicated and obscured by the greater development of his intellect. The behaviour of the animal mother sacrificing herself in the protection of her young; the horse shying at some vaguely outlined object in the dark; the male bird pouring forth ceaseless music that brings his future mate to his side—all this untaught behaviour has its analogies in human behaviour. The animal acts purposively, but sees only the immediate and not the remote consequences of its actions. Similarly among humans the distant purpose of certain behaviour is often obscured. Thus the infant cries out because it is left alone, or experiences some discomfort, but it has no knowledge of the assistance that is ever available. Likewise the young girl, who bestows such assiduous care on her toilet, is hardly aware of the purpose of her efforts. Similarly, Professor McDougall tells us, the adolescent male who, in the presence of the opposite sex, “redoubles his effort, in the game of strength or skill, may know as little as the bird pouring out his song what end is subserved by his reckless energy”. The study of animal behaviour, in addition to throwing light on the development of the human mind, has also helped us to understand the instincts of man. We see the instincts of sex, fear and pugnacity operate in man as clearly as in the lower animals.

**Child Psychology.**—This subject has lately received much attention and promises to prove one of the most fruitful fields of research. Its findings have already been of inestimable

value to educationists. The study of the child's mind is only little less difficult than the study of the minds of animals. In the early years of his life he can tell us nothing of his own feelings and impressions. He cannot reveal these in words. He has therefore to be studied by the objective method. We can observe how his behaviour at first is chiefly instinctive and demonstrates thereby his kinship with the lower animals. Thus he is observed to be playful, to be subject to outbursts of passion, to seize what he fancies, etc. His activities are centred almost wholly on preserving himself, for instance, when he runs away from a stranger, or strikes out when he is annoyed. As he grows older we observe the influence of his environment upon his conduct. The instinctive behaviour becomes restrained and modified. He is less self-centred and shows some regard for the interests and feelings of others.

**Individual Psychology.**—In this field are studied the peculiarities and mental constitution of the individual which tend to make the behaviour of each person unique or peculiar to himself. In practice we obtain much valuable information concerning the individual's mind, i.e., his memory, intellectual capacity, special abilities and so forth, by means of mental tests.

**Abnormal Psychology.**—This subject deals with the mental life of persons whose behaviour is different from that of the majority of their fellows. The behaviour of the mentally abnormal comes under this heading. It was not until quite recently that the subject of mental disorder began to be studied in the light of psychology. It was believed that all such disorders resulted from organic disease or structural alterations in the brain. While some are undoubtedly associated with organic changes in the brain, such as general paralysis of the insane, the majority are the expression of normal mental processes functioning in an unusual way.

**Social Psychology.**—The thinking and behaviour of a person as a member of society is very different from his thinking and acting as an individual. His contact with society from childhood moulds his thought, morals and behaviour in a very definite way. There are three processes by which society

operates upon the plastic mind of the individual ; suggestion, sympathy and imitation. We are all inclined to accept without question the beliefs held by the majority ; we all tend to experience the emotions and impulses of our fellows ; and, lastly, our behaviour is frequently determined by the example set by our fellows. The panic-stricken crowd is a good example of the operation of the sympathetic principle on the minds of people. If a few persons in a crowd betray visible and audible signs of fear, the excitement will spread rapidly until everyone is similarly affected, although the cause of it all may be quite unknown to them.

Suggestion is a powerful element in the behaviour of groups of individuals. Under the influence of a fanatical orator, scores of people have been known to become hallucinated or hysterical.



## CHAPTER XL.

### MENTAL PROCESSES.

SENSATION — ATTENTION — PERCEPTION — MEMORY —  
ASSOCIATION OF IDEAS—REASONING AND JUDGMENT—  
AFFECTIVE FUNCTION—INSTINCTS—HABIT—VOLITION—  
DESIRE.

Mental life is made up of three processes, viz. : (1) **Knowing, or cognition** ; (2) **Feeling, or the affective function** ; and (3) **Striving, or the conative function**. When we observe, imagine or remember anything, we exercise the function of cognition. When we are affected pleasantly or unpleasantly, when we experience joy or grief, pleasure or pain, we exercise the affective function ; we are said to be feeling. The term affection in psychology has thus a wider meaning than in ordinary everyday language, where it means love or close friendship. When we are doing things with a definite object in view, we are striving towards an end ; we exercise the conative function.

There is a close relationship between conation and feeling. The achievement which follows striving brings with it a pleasant feeling, a sense of satisfaction ; again, thwarting of efforts to attain our objects is accompanied by a painful feeling.

The three aspects of mental activity, feeling, knowing and willing, are not equally prominent at all times. Indeed, great activity of one is actually opposed to the activity of the others. For instance, under the influence of intense feeling, clear and calm thinking is difficult. Yet these three aspects of mind are inseparable. We cannot experience pain without exercising our thinking, or without striving to get rid of it. Similarly when we are intellectually quiescent, when, as it were, we think of little or nothing or only trivial things, we experience a sense of pleasantness and ease.

### Sensation.

Sensation is merely the response of a sense organ to a stimulus, and does not of itself have any meaning for the person experiencing it. For instance, when light stimulates the eye, we see something. When a particular sound reaches the ear, we hear something. We do not start life with a knowledge of the things around us. The child does not have to learn to see or hear, but he has to learn the meaning of what he sees or hears. If you hold, say, an apple before a young infant, he may see it without knowing what it is.

A sense organ is a part of the body that is sensitive to a certain stimulus, e.g., the ear responds to minute sound vibrations. Each sense organ contains special nerve endings, which are connected by the sensory nerve with the nerve centre in the brain.

The distinguishing characters of a properly functioning sense organ are that :—

- (1) It is selective, that is, it responds to only one kind of stimulus.
- (2) It is sensitive, that is, it responds to slight stimulation.
- (3) Its response varies with the intensity of the stimulus, e.g., it distinguishes between a faint and a loud sound.
- (4) It distinguishes the qualities of a stimulus, e.g., indicates whether a colour is red or blue.

### Cutaneous Sensation.

Formerly it was thought that the skin possessed only one sense quality. We know now that there are in fact several varieties of cutaneous sensation. The more important are the following :—

(1) **Contact.**—This is experienced when the skin is touched by any object. The sensation is conveyed by the nerve endings in the skin. The hairs on the body also act as touch organs, not directly, but indirectly as they extend downwards among the nerve endings, which they stimulate.

(2) **Temperature.**—When a piece of metal heated above the body temperature is drawn along the surface of the skin, only in certain places is a sensation of warmth felt ; in other places the sensation is that of cold. This is due to the fact that there are heat spots and cold spots. Stimulation of a cold spot will give a sensation of cold no matter what stimulus is used, whether warmth, pressure or even an electric current.

(3) **Pressure.**—When the nerve endings in the deeper layers of the skin are stimulated, a sensation of pressure is experienced. Gentle pressure on the skin with a pointed rod is felt only in certain spots, known as pressure spots.

(4) **Pain.**—Certain spots, when stimulated, give rise to a sensation of pain. Pain spots may be located by moderate pressure upon the skin with a sharp point ; here and there painful sensations will be experienced. The pain that is felt is not merely a sensation of intensified pressure, but a different sensation.

All these cutaneous sensations are of the utmost importance, in that they enable us to obtain knowledge of the material things around us. They help the child to gather information concerning his body, as a thing apart in space. Together with the muscle sense, they are employed in the appreciation of certain qualities of objects, such as weight, shape and size.

### **Taste and Smell.**

The sense organs of taste, called the taste buds, are situated not on the surface of the tongue but in little depressions or pits. Substances are not tasted properly or even tasted at all, if they are not in solution. For instance if the tongue is first dried, and a cube of sugar or a lump of salt alternately placed on it, the latter cannot be distinguished from the former. In fact, the taste of neither is appreciated. There are four qualities of taste, sweet, salt, sour and bitter. Other sensations of taste are due to the introduction of other factors. Temperature, for instance, influences taste, as in cold ice-cream, or hot coffee ; melted ice-cream and cold coffee seem to taste differently. Smoothness or roughness, too, act in a similar way. Thus castor sugar placed on the tongue



tastes differently from granulated sugar. It must be remembered that the tongue possesses the cutaneous senses as well, namely, touch, heat, cold and pain.

The elementary taste sensations are located in different places. Thus bitter is chiefly appreciated at the back of the tongue, sour at the sides, salty and sweet chiefly at the tip and sides.

There are many complex sensations in the sense of taste, e.g., lemonade is a compound of sweet, sour, lemon and cold. The taste of most of what we eat is, however, largely affected by the olfactory sense. This is shown by the fact that when we have a cold, and our sense of smell is thereby interfered with, we do not taste our food.

The vagueness of odours is significantly reflected in everyday speech. Thus we speak of an odour as pungent, nauseating, sickly, heavy, etc. In fact, we often employ the name of the object itself in describing its odour, e.g., fishy, tarry, meaty.

## Hearing.

Only a few facts concerning the structure of the ear need be mentioned here. The ear consists of three parts: (1) the outer ear, commonly called the ear, which is the cartilaginous portion that acts as a receiving apparatus for the sound waves; (2) the middle ear, which is a hollow in the skull, separated from the outer ear by the eardrum and containing the three bones, the hammer, anvil and stirrup; and (3) the inner ear, another cavity in the skull which contains nerve endings of the auditory nerve and a quantity of fluid. When a sound wave impinges upon the eardrum, the vibration produced is transmitted to the liquid in the inner ear, and stimulates the nerve endings.

The stimulus in the sensation of hearing is the vibration of the air. On the rate of vibration depends the pitch of what we hear. A large organ pipe may produce as few as 16 vibrations a second, while a sharp sounding whistle will emit

30,000 or more a second. The amplitude of the wave determines the loudness of the sound. The form of the wave determines the quality or timbre of the sound, e.g., the same notes in a violin and piano differ in timbre.

All heard sounds may be divided into musical tones and noises. In the former the vibrations are regular, in the latter irregular.

In addition to an extensive variety of musical sensation the ear can distinguish very many non-musical sounds, e.g., the roar of the breakers, the crack of the whip, the rustling of leaves in the wood, and so forth. The ear is a much more accurate registering apparatus for sounds than the eye is for light. It is possible, through the system of musical notation, to indicate the exact quality of a sound.

Sound, as the foundation of language, enables us to communicate with each other, and deafness is sometimes regarded as a greater affliction than blindness, because it involves a loss of communication with our fellows.

### **Sight.**

Sight is generally regarded as the most important sense. We trust vision before any of the other senses. "Seeing is believing", is a trite saying. When we recall an object, we remember it by what it looks like rather than by its other qualities. The pre-eminence of the eye over the other sensory organs is also suggested in the extreme intricacy and delicacy of its structure.

In structure and mechanism, the eye bears a close resemblance to a camera. The tough membrane round the eyeball, the sclerotic, may be compared to the wooden box of the camera. The black choroid lining of the sclerotic is comparable to the black paint over the interior of the camera, which serves to keep the light out, that may otherwise blur the picture. In the front of the eye, the coloured iris, with the pupil in the centre, may be seen. The size of the latter is governed by the muscle fibres in the iris. The corresponding mechanism in the camera is the diaphragm. The lens in the

camera has its counterpart in the lens of the eye. The retina, a thin membrane lining the back of the eye corresponds to the sensitised film in the camera. It contains the sense cells, the rods and cones that receive the rays of light.

The eyes have a wide range of movement and thus enable us to follow moving objects. Sight enables us to form an impression of the apparent shape and size of things. The actual shape and size of things is learned from sight plus touch. For instance, an object of irregular shape may look oval or globular, larger or smaller, according to the view one has of it. But, when it is handled, its shape and size are precisely determined.

Visual experiences may be divided into two classes, light and colour. Under light we include all visual impressions ranging from the brightest light we can bear to look at, through gray to utter darkness. In colour we have a wide range of differences, from red to violet, and including combinations of all the colours of the spectrum.

There are some persons who are defective in distinguishing certain colours. This is due to the absence of certain cells in the retina.

### **Joint and Muscle Sensations.**

In addition to the five well known senses, research has brought to light other forms of sensation. Among these are the sensations caused by the stimulation of nerve endings in joints and muscles. We do not possess names for these sensations but we are aware of them.

We know the position of our limbs by means of joint sense. This can be shown by passively moving a person's limb into a certain position and then asking him to place the opposite limb into the same position. He is able to do this with his eyes closed. The sensation given on moving the limb in one direction is characteristic of that movement and differs from that experienced on moving it in any other direction.



Muscle or kinaesthetic sensation depends on the stimulus aroused by muscular contractions. Slight differences in the weights of objects of similar size can be detected by muscle sense, e.g., the difference in weight between a penny and a half-crown.

### **Organic Sensations.**

Among the less clearly defined sensations, are organic sensations, such as hunger, thirst and nausea. They have not been analysed, and their sense organs have not been identified.

### **Attention.**

Attention is the property of mind by which we respond only to one stimulus out of the many which are passing through our sense organs at any one time. Attention is selective and regulates our perception and thoughts. It may be compared to focussing, by means of which rays of light can be made to fall on a certain object or area. When you are playing tennis, your eye, and your attention are fixed on the ball and you may be unaware of, or only dimly conscious of, other circumstances such as the spectators, the heat or noise, or even a blister on your heel.

Any change of stimulus, particularly a sudden change, readily attracts our attention. We no longer notice a noise to which we have grown accustomed, but, if the sound changes in any way, our attention is at once aroused. Thus, in the train, we pay no heed to the rhythmic clanking of the wheels until our attention is attracted by some change in the sound, e.g., when the train passes over points or comes to a stop.

Stationary objects may escape our attention, but are quickly noticed as soon as they change their position. Thus an animal on the veld, which has escaped detection by remaining perfectly still, may draw attention to itself by moving.

A strong stimulus attracts attention more readily than a weak one, e.g., a loud noise forces itself on our attention, while a slight sound may not be noticed.

The attention may be aroused by the repetition of a stimulus. Thus one stimulus, such as a faint call, may fail to draw our attention, but may do so if it is repeated several times.

An object which is clearly defined is more readily observed than a vague, though larger, object.

Attention is sometimes classified as involuntary and voluntary. Involuntary attention is spontaneous and effortless. Voluntary attention, on the other hand, is accompanied by effort and has to be sustained by an incentive, such as interest.

A distraction is any stimulus that interferes with sustained attention. Usually such a stimulus has some compelling quality over that which, for the time being, holds the attention. Thus, a person who is occupied with anything uninteresting is easily distracted by fresh stimuli. The attention of a person unwillingly engaged in reading this would be easily distracted by, say, hearing music.

Elsewhere in this book is described the distractibility seen in states of mania. In this condition, the patient may be unable to sustain attention longer than for a few moments. Every stimulus that reaches him, everything he hears and sees, usurps his attention and evokes some new response.

### **Perception.**

Attention may be regarded as a preliminary to the process of perception. An infant experiences a sensation when a loud noise suddenly reaches its ear, but does not know where it comes from, or what causes it; in other words, it has no meaning for him. Later, the sensation becomes linked with other sensations, and he comes to comprehend its meaning through the process of perception. He no longer merely hears the noise, but he distinguishes it from other sounds and recognises its distinctive character.

Perception is mostly the result of learning and past experience. What you perceive depends largely on what you have seen before.

The impressions received from sensations alone are not always correct. They do not always give us a true idea of the objects which give rise to the impressions. Take, for instance, the impressions we obtain from looking at a rectangular table. Looked at from a corner, we may see an acute or an obtuse angle, although we know from previous experience that all the angles are right angles. Similarly, a long, straight avenue appears to become narrower in the distance, but we know that this is not so. Thus memory has to come to the aid of sensation in perceiving things correctly. It follows, therefore, where the memory is bad, perception is faulty.

In perception, the qualities of an object are combined or grouped by several senses. Thus an orange stimulates the sensations of sight, touch, taste and smell, and our perception of an orange consists of a combination of all the sensations which it arouses.

### **Memory.**

Memory is the faculty whereby we recall to our consciousness a previous experience. It is a very important quality of mind. Our past experiences form a basis for our present and future judgment and conclusions, and the highest or most advanced mental processes are dependent on memory.

Four definite processes are involved in memory: Learning, retention, recall, and recognition.

In **learning**, much depends on what is known as the immediate memory span, the amount that one can recall immediately after hearing. This can be tested by asking a person to repeat a set of numbers. Most average persons can repeat up to six numerical digits without error, but fail when they try to repeat seven. It is however found that, when the seven digits are repeated two or three times, the person may succeed in reproducing them.

When things are learned because they are associated by one succeeding another, e.g., the letters of the alphabet, the process is called **rote learning**. When, however, they are learned because of reasoned association between them, they



are comprehended and form part of our stock of accumulated knowledge. It is easier to remember anything one has to learn if one masters the connected meaning of it.

Repetition is an aid to learning, especially if it is distributed over considerable periods rather than employed frequently during a short period. For instance, going over a lesson daily for eighteen days is more effective than repeating it eighteen times in one day.

Attention and interest are important factors in learning and the fixation of impressions in our minds. In order to perceive things clearly one must attend to them, and interest in a particular subject stimulates our attention.

**Retention** means the persistence of the impression made by learning. Forgetting implies the disappearance of the impression. It would seem that, when one has learned anything, certain changes take place in the brain and that these changes become slowly consolidated. In persons recovering from concussion, it is usually found that they remember little of what happened during the half hour before receiving the blow on the head. It is presumed that the impression of events during that time had not been properly consolidated. Most impressions disappear after a time in accordance with certain laws. Thus the impression of unimportant matters will fade sooner than that of important ones.

Has forgetting any advantages? Some may think it has not. Forgetting is in fact a mixed evil. It has its advantages as well as its disadvantages. Of what use, for instance, would it be to remember all the trivial incidents in everyday life? Forgetting, like attention, is a selective process; the unimportant things are excluded to make way for the things that matter.

**Recall** means calling back to the conscious mind what has been learned or done before. The process is very similar to that of learning, in that anything that is recalled is re-aroused through some association. This is effected through some "cue" or stimulus, some idea or sensation associated with what is to be recalled. One sometimes feels that there is

something that one knows, it lies "on the tip of the tongue", but one cannot recall it. In such a case it usually cannot be recalled because of the absence of this associative link.

Various factors, such as the emotional state at the moment, influence recall. Fear is an effective obstacle to recall, as students at examinations will tell you. The inexperienced and selfconscious amateur performer who stops dead in the middle of repeating his carefully prepared lines is another example of the emotional state blocking recall.

By **recognition** is meant the identification of things we have seen or heard before. We recall things that are not there; we recognise things that are present.

Recognition is facilitated by careful observation. When the distinctive features of an object are noted when it is first observed, it is later more readily recognised.

### **Association of Ideas.**

Ideas are mental images. When we look at an object, we have a perception of it; when we close our eyes and think of an object which is no longer there, we have an idea or image of it. By imagination we can reproduce the sensation in the absence of the original stimulus, e.g., a man who has become blind can imagine sight.

A single stimulus may awaken in the mind numerous ideas which are related to or associated with it. Thus the sight of an orange recalls the sensation of its smell and taste, and the object is perceived or recognised; it might also recall the colour of a frock and the wearer of it, or a book and its contents. Association of ideas is the basis of thinking.

There are certain conditions that regulate the association of ideas and tend to link them together. Experiences that have occurred at the same time, or in succession, subsequently suggest one another. Words repeated in the same succession, as in poetry, will be reproduced by hearing the first word only.

Ideas may become associated by similarity. The features or voice of a stranger may recall memories of an old friend.



Ideas may also be associated by contrast. When two experiences, showing strongly-marked differences, are brought before the mind at the same time, or in immediate succession, and the relation between them is perceived, the two experiences will become strongly associated and, afterwards, one may recall the other. Usually, such experiences have elements in common. Thus dark contrasts with light ; hard with soft. Dark does not contrast with soft, because they have no quality in common.

Association may be simple or complex, that is, a given impression may evoke only one recollection or may simultaneously arouse a large number. For instance, the term " the Great Trek " may bring to mind the name of Piet Retief, or the treachery of the native barbarians, or the historical connections with Natal, or may set up a train of thought about the pioneering work of the Afrikaner people.

Association is facilitated when the meaning of what is seen or heard is understood. An imbecile, after repeated efforts, can learn to gabble off some lines without understanding them. An intelligent person, because of his appreciation of the sense of the same lines, may remember them after a single reading.

Disorder in the association of ideas is a prominent feature in some morbid mental conditions. In manic states it is greatly accelerated. In depressed states, and in the sub-normal, it is retarded. In confused states it is wholly disorganised.

### **Reasoning and Judgment.**

#### **Reasoning.**

Reasoning is one of the distinctive characteristics of man ; it has been defined as purposive thinking, that is to say, thinking with a definite purpose in view.

In reasoning, we are faced with a problem, and we try to solve it by bringing together all available facts that appear to have a bearing on the problem, and by comparing the facts of the new problem with memories of similar problems



experienced in the past. Thus, if I see the sky is overcast, I reason whether it is going to rain, by comparing the colour of the sky, the arrangement of the clouds, the wind and so forth, with memories of similar previous experiences.

### **Judgment.**

A judgment is a conclusion at which we arrive by the process of reasoning.

We judge whenever there exists a doubt or a question. We observe closely, refer our observations to a former experience, exercise our reason and arrive at a conclusion or judgment.

Certain conditions are essential for good judgment. We must first of all have the necessary material, that is, information derived from our own experience or communicated by others. Secondly, we must examine closely not only the facts before us at the moment, but also those of the past, and compare the present circumstances with those of the past. Thirdly, we must exercise our voluntary attention. Clearness and accuracy are the most important qualities of good judgment and, when observation is vague and careless, clear judgment is impossible. It is partly because children do not concentrate and sustain their attention so efficiently as adults do that they are unreliable in their judgments. A fourth condition that influences judgment and may impair its reliability is the emotional state. In states of excitement, depression or of prejudice, we may be incapable of forming a sound judgment. In the heat of the moment, one is inclined to exaggerate. Most of us can recall instances where statements made in a bad temper were subsequently recognised to be overdrawn or unjustified.

### **The Affective Function.**

Under the affective function are included feeling, emotion, mood and temperament.

### **Feeling.**

The feelings may be divided into pleasant and unpleasant. Pleasure, joy, delight, happiness, satisfaction, elation, are states of the former. Grief, sadness, sorrow, depression, dis-

content, are examples of the latter. Feeling is closely related to sensation. Thus we speak of a pleasant sound, an unpleasant flavour. Feelings and sensations are aroused by the same stimulus, but they are distinct and not readily confused. Sensation is more definite and more localised and more constant as a response. Feeling is diffuse, vague and variable, permeating the whole being. Feelings aroused by the same stimulus may vary from time to time, because they depend so much on the mood of the moment or on previous experience. What may be pleasant at one moment may be unpleasant on another occasion. Sensations, on the other hand, are dependent not on the mood of the individual but solely on the nature of the stimulus.

Feelings of pleasantness and unpleasantness may be produced by stimulation of any of the senses, by memories of previous experiences, or by the success or failure of our efforts. Thus we experience pleasant and unpleasant odours, pleasant and unpleasant sounds ; we also experience agreeable or disagreeable feelings when we recall happy or unhappy incidents, and we have the unpleasant feeling of failure when we are unsuccessful in attaining our aims.

Our feelings vary with the intensity of the sensation by which they are aroused. Thus sweetness, which is generally pleasant, becomes distinctly distasteful when in excess. Pleasant feelings appear to increase in intensity up to a certain maximum degree of stimulation, after which they assume the opposite quality.

Duration affects feeling in a similar way. If a pleasant sensation is too prolonged, the feeling aroused finally ceases to be pleasant and becomes unpleasant.

Again, the feeling to which a stimulus gives rise is influenced by the sentiment and previous experience of the individual. What may be pleasing to one person may be unpleasant to another because of previous association, e.g., the name of a certain place may arouse a pleasant or an unpleasant feeling, depending on whether the individual has had happy or unhappy experiences of it.

There are certain bodily changes which accompany feelings. We can observe, in the person who is pleased, the bright eye, the flushed cheeks, the dilated pupil and the happy expression.

When feeling is intense, bodily sensation may be diminished or absent altogether. For instance, minor injuries received during a football match may only be noticed after the game, and the melancholic distraught with grief may not feel the suicidally inflicted wounds.

### **Emotion.**

Emotion is like feeling in being diffuse, but its qualities are more defined, and it is a more complex response than feeling. The emotions are more clearly demarcated from each other ; they have definite motor accompaniments and they are linked to the instincts. Every emotion includes the processes of cognition and conation in addition to feeling. Thus one becomes aware of a situation ; with this goes a pleasant or an unpleasant feeling, as the case may be ; and, finally, there is a tendency to act in a manner appropriate to the occasion. You are crossing a railway line and suddenly hear the warning shriek of an engine whistle close at hand ; you feel afraid ; you leap from the track. This is the emotion of fear. The emotions of fear and anger are the most important. Among others are those of grief, joy, disgust and love.

The external manifestations of the emotions are the same in all races ; they constitute a universal language understood by everyone. Some are survivals from an early stage in the development of man. Thus the sneer of the angry man corresponds to the baring of the teeth in the growling dog. The expression of disgust in the upturned nose was originally a defence against bad odours. Gestures, postures, the expression of the face and the different tones and inflections of the voice may be indications of specific emotions, e.g., the clenching of the fist in anger, the droop of despair, the smile of approval, and the cry of fear. Every one signifies its own peculiar emotion.



As we grow older and come to pay more regard to social conventions, we tend to conceal or control our emotions. The boy is taught that it is cowardly to cry, bad manners to lose his temper, and disgraceful to show fear.

The ancients were wont to locate the emotions in different organs, e.g., courage in the heart. We do, in fact, experience certain sensations in different parts of the body under certain emotional strains, for example, the lump in the throat when we are deeply affected, the trembling of the knees in fear. Other changes may occur of which we are not always subjectively aware. The pulse and respiration rates are increased in states of excitement, and the blood pressure may be raised ; the flow of saliva may be reduced, causing dryness of the mouth, and the peristaltic movements of the stomach cease.

Recent research has revealed the important part played by the secretion of the endocrine glands in states of emotion. In rage and fear there is an increase in the secretion of the suprarenal glands which stimulates the sympathetic nervous system. This causes the liver to release some of its store of glycogen to supply nourishment and energy to the muscles ; it also stimulates the heart to beat more rapidly and strongly, and causes a rise of blood pressure by constricting the small arteries. The effects of the increased secretion of adrenalin is to summon the forces needed in time of danger and to supply energy and prepare the individual to attack his enemies or defend himself, or to take flight. The secretion also produces the well-known bodily accompaniments of fear, such as palpitation of the heart, erection of the hair, dilatation of pupils and cold sweating. Deficiency of thyroid secretion dulls the emotions and excess produces a state of apprehension and agitation. The secretions of the pituitary gland and the interstitial tissue of the sex glands also have an influence on the instincts and emotions.

Fear, the response to any dangerous or threatening situation, may show itself in concealment, or in immobility to elude observation, or in the cry for help. It is a mistake to think we are born without fear. The infant shows signs of fear when he experiences a sensation of falling. Quite early

in life we show fear of darkness ; this is probably a survival of primitive man. It was in dark, unexplored corners that dangers lurked.

Anger is usually aroused in us when our desires are thwarted. When we have set our mind on accomplishing something and are hindered at any stage, we become angry. Pain, especially when it is unexpected, is also liable to make us angry, as seen in the case of two boys indulging in some horse play which suddenly turns into a fight as a result of one having unexpectedly and unintentionally struck the other a painful blow. The instinctive response to anger is pugnacity.

### **Mood and Temperament.**

A **mood** may be defined as a prolonged state of mild emotion. It may last for hours or days. It may also be regarded as a predisposition to a more intense emotion. For instance, when a person is in a cheerful mood, everything pleasant looks or becomes even more pleasant. On the other hand, when one is in an angry mood, trifles will irritate or anger one. In this way, one may be "set" for an outburst. The state of one's health is an important factor in producing a pleasant or unpleasant mood. A person who gets up in the morning with a headache will more readily give way to anger than a person who rises feeling fresh.

**Temperament** is a mood that is permanent. It is largely an innate quality but is susceptible to modification. The ductless glands exert a pronounced influence on temperament. Among these, the thyroid is one of the most important. When the secretion of the gland is excessive, the individual is inclined to be restless and agitated ; when the secretion is diminished, he is dull, retarded and apathetic.

Temperament has not as yet been satisfactorily analysed in all its aspects. For the present all we know is that everyone is not similarly affected by emotional situations. Some respond readily, others slowly. The emotional response of an individual towards a certain stimulus depends on his temperament as much as on the stimulus itself ; that which makes one person smile may make another frown.



### **The Instincts.**

Instincts may be defined as certain inborn forces, or innate tendencies, inherited from generations of ancestors, which compel us involuntarily to attend to certain stimuli, to experience an emotion specially associated with the particular stimulus, and to act in a certain manner in response to it or to have an impulse to do so.

Instinctive actions are performed without previous experience or reasoning and often without conscious recognition of the objects to be attained by them.

Instincts exert a strong influence on our behaviour, though this fact may not be realised by the individual. The primary instincts are the same in man and animals; they cannot be eradicated from our personality, but they may become modified or perverted. The instincts and the actions which result from them are generally beneficial to the individual or the species, and they have developed because they were of prime importance for the survival and evolution of the race. Animals as a rule blindly follow their instinctive tendencies or attempt to do so, but man's reactions may be modified or restrained by reasoning or by prohibitions imposed by the community to which he belongs.

The behaviour of a newly hatched female wasp may be described as an example of the influence of instinctive tendencies. As soon as she is hatched and emerges from the nest, she sets about hunting for a suitable nesting place. Having found one, she makes preparations for laying her eggs there. She deposits a quantity of food by the eggs, and covers the eggs and food with a mud coating. She has never witnessed the building of a nest, or the depositing of food in preparation for the arrival of the grub. She never sees the results of her diligent work. In due time the grub hatches out and for some time lives upon the food deposited alongside it, until it, in its turn, makes its appearance as a full grown wasp.

There are innumerable instances of such behaviour, which is determined not by reasoning, but by innate tendencies that force the living creature to behave in a certain definite purpose-



ful manner that never varies. We see similar processes at work in many other directions ; in the courtship of birds during the mating season ; in the care and tenderness of the mother towards her young ; in the migration of the swallows from the cold of winter to the warmth of summer ; in the pursuit by a kitten of a mouse which it sees for the first time ; in the flight of a bird at the sight of a cat. All this is done spontaneously without any reasoning. The infant requires no teaching to take the breast. Such an act is innate and manifests itself as a spontaneous unlearned response.

Psychologists differ as regards the classification and number of separate and independent instincts. Generally, it is accepted that a person is born with two or possibly three primary instincts, namely, the instinct for self-preservation, the instinct for the preservation of the species, and the herd or gregarious instinct ; in alliterative and popular terminology, they may be designated as the instincts for self, sex and society. Some authorities have separated and described seven or more separate primary instincts, each with its own specific emotional feeling, and other innate tendencies with which no special emotion is associated. It appears that some of these instincts or tendencies may be regarded as different modes of expression of one or other of the primary instincts and that they may be classified accordingly.

Although present at birth, the human instincts do not become fully developed until later in life and, as a result of environmental influences, they may become more complicated and expressed in a number of different ways. Some instincts remain immature or dormant until the age of fifteen to sixteen years.

Instinctive reactions are similar to reflex actions in that the response to a specific stimulus is inborn and is more or less involuntary and uniform, but the instinctive behaviour is more complicated and varied and, in man, can be modified to some extent.

### Varieties of Instincts.

The following varieties of instincts have been separated and described together with the specific emotions with which most of them are associated :—

The instinct of food seeking associated with the emotion of hunger.

The instinct of flight associated with the emotion of fear.

The instinct of pugnacity associated with the emotion of anger.

The instinct of repulsion associated with the emotion of disgust.

The instinct of self assertion associated with the emotion of pride.

The instinct of self abasement associated with the emotion of humility.

The instinct of curiosity associated with the emotion of wonder.

The instinct of acquisitiveness.

The instinct of reproduction associated with sexual emotion.

The parental instinct associated with the tender emotion.

The gregarious or herd instinct.

**The instinct of food seeking** is one of the first to manifest itself in the efforts of the newly-born infant to suck and obtain nourishment from its mother's breast. It is common to all forms of life and is associated with the characteristic sensation of hunger. This instinct may find expression in other activities, such as hunting and fishing, and in industrial enterprises and commerce which have developed as a result of the necessity for obtaining food.

**The instinct of flight** is associated with the emotion of fear and can be observed in man and all animals. It may be stimulated in various ways ; a sudden loud noise, such as thunder or the firing of a gun, may cause fear and an impulse

to run away. The anticipation of pain also arouses the instinct of flight. In animals, fear is accompanied by a tendency to flee or to hide ; a mouse, on seeing a cat, experiences fear and seeks refuge in flight. This action is not the result of reasoning but is an inborn tendency. The flight instinct is one which is bound up with the instinct for self preservation.

In idiocy, the lowest degree of mental deficiency, this instinct may be abolished, and the person may fail to react to danger. In some forms of mental disorder the instinct is exaggerated and there is a state of terror and anxiety.

**The instinct of pugnacity**, associated with the emotion of anger, is aroused by any interference with the individual's freedom of action in the attainment of an object, or by the thwarting of his desires. It is opposed to the instinct of flight ; it reinforces other instincts, such as those of food-getting and reproduction, and it is stimulated by any hindrance to their gratification. In the lower animals, the fighting instinct is vividly demonstrated when their food getting or mating activities are obstructed, or when the safety of their young is threatened.

**The instinct of repulsion** is associated with the emotion of disgust and is aroused by objects which are offensive or loathsome in some way, e.g., there is an impulse to eject from the mouth anything which is felt to have an objectionable taste or smell. This instinct helps to prevent us eating substances which may be unwholesome or poisonous and, in this respect, it is one of the instincts of self preservation.

In some cases of mental disorder and of low grade mental deficiency, the instinct of repulsion may be perverted and patients may eat filth of any kind.

**The instinct of self assertion** is associated with the emotion of pride and displays itself in the behaviour of man and animals in the presence of their fellow beings. The boastfulness and love of display characteristic of adolescence is one of the common manifestations of this instinct. The later development of this instinct may be beneficial to the individual



and the community, as it helps to inculcate a sense of dignity and independence, and the individual may realise an obligation to live up to the standard of his own claims or assertions.

In some forms of mental disorder associated with exaltation and delusions of grandeur, the instinct of self assertion is exaggerated.

**The instinct of self abasement** or submission is associated with the emotion of humility. Its activities are opposed to those of the instinct of self assertion, but both instincts co-operate to maintain discipline and respect for authority. In some states of mental depression this instinct is much exaggerated.

**The instinct of curiosity** associated with the emotion of wonder can be observed in animals and man. A small dog cautiously approaching and then closely inspecting a strange object is an example of this instinct, and monkeys are notorious for their exhibition of it. In man, it has been an important factor in stimulating scientific research and intellectual development.

**The instinct of acquisitiveness** is common to all human beings and can be observed in animals. In man, the tendency to collect and hoard is almost universal, and the contents of a school boy's pockets show that it is present at an early age. In older people, it may show itself not only in the accumulation of money but in the habit of collecting articles, some of which are neither useful nor ornamental. In the mentally disordered, particularly in senile cases, the hoarding of rubbish is a common symptom.

**The reproductive or sexual instinct** is probably the most powerful of all the instincts and its importance for the preservation of the species is obvious. It does not become fully developed until puberty, although immature indications of it may be observed in childhood. In animals, it operates almost automatically, but, in man, its manifestations are restrained by laws and customs. The sex instinct has played an important part in the cultural development of mankind and its repressed energy has found an outlet in other spheres of life, social and economic, as well as intellectual. It has been

the source of inspiration for poets, dramatists and artists, and is manifested in a disguised or sublimated form in many other kinds of socially approved activities. In the mentally abnormal, the sex instinct may be diminished or exaggerated, or it may be perverted in various respects.

**The parental instinct** and the tender emotion associated with it are allied to the reproductive instinct and assist in the preservation of the species. It is a powerful force in man and animals and may overcome the instinct to flee in the face of danger, as may be seen in the desperate determination with which an animal will defend its young at the risk of its life. The parental instinct is responsible for the development of family life and the tendency of human beings to associate themselves in groups or tribes. The growth of altruistic feelings such as pity and benevolence is probably due to the parental instinct.

**The gregarious or herd instinct** is the tendency of individuals to live together and to organise groups such as families, tribes, nations, societies and clubs for the purposes of defence, attack, assistance and social intercourse. The same tendency can be observed in animals which herd together for protection and often hunt in packs, and the fact that an animal reared in captivity immediately joins its group when released shows that the tendency is an inherited one.

In certain forms of mental disorder, such as schizophrenia and melancholia, the herd instinct may be weakened and, in abnormal or so-called psychopathic personalities, it may be perverted.

The tendencies of the herd instinct and the necessity to conform to the laws and customs of the social group to which the individual belongs are frequently opposed to those of the instincts for the preservation of self and the species, e.g., in war a man may be called on to sacrifice his life for his country, a starving man is punished if he steals food, and the natural manifestations of the sex instinct are restrained and governed by conventions and laws. The incompatibility between the sex and the herd instincts is responsible for so-called mental conflicts which are often the cause of mental disorder.

### **Habit.**

Habit must not be confused with instinct. An instinct is inborn, common to everyone, and is natural and beneficial to the individual or the species ; a habit, on the other hand, is acquired, peculiar to the individual, and may be good or bad. A habit is merely a well learned action and it exemplifies the powerful effect of repetition and practice. Practice is said to make perfect. Every repetition of an act makes its subsequent performance easier and lessens the attention needed in doing it. You may see it in the way you button your coat ; you need not attend to what you are doing or look for the buttons. The nervous impulses pass more smoothly and rapidly along well worn paths.

We saw that remembering anything depends on its getting “ set ” by learning. Similarly a habit, which is a frequently repeated action, is difficult to unlearn ; it gets well set. Punctuality, industry and good temper are largely matters of habit. A man of industrious habits feels ill at ease if he has to hang about doing nothing. Again, every time one loses one’s temper makes it easier for a subsequent outburst to occur, whereas every time one controls one’s emotion, when mildly provoked, fortifies one to face a greater trial with equanimity. Every time we resist a temptation makes it easier to face the next. Yielding has the opposite effect.

Bad habits, such as nail-biting, thumb-sucking and bed-wetting in children, should be dealt with before they have become confirmed.

The acquisition of good habits is essential for progress. Habits economise time and effort and release us for more important work requiring closer attention. Training in good habits and the checking of bad ones is an essential part of education.

### **Volition or Will.**

#### **Action.**

The mental processes of knowing, or cognition, and feeling find their final expression in conation or action. The idea of attaining some definite object is the first stage of an act ;



this is accompanied by feelings which arouse impulses to carry out the actions necessary to attain the object.

Suppose we are faced with two courses of action and must decide on one. We pause to think, we reason, comparing the advantages of each and the difficulties to be overcome, and we act accordingly, choosing the course that appears to us to offer the greatest advantage; or we imagine that we do so. This is known as conscious or deliberate will, and the extent to which it is exercised varies with the circumstances and with the individual's personality. For instance, if we waken in the morning and have to decide whether we will lie an extra half hour reading or whether we will get up and start the day's work half an hour earlier, the course we follow will depend on our character and habits.

Reasoning is seldom the only factor which decides our actions; the anticipation of pleasure strongly reinforces certain actions and the fear of pain or discomfort inhibits others. In exercising the will we are influenced by desires and duties. Thus, if we decided to spend an extra half-hour in bed instead of devoting extra time to our work, the reason would be found in the immediate pleasure it afforded us. On the other hand, if we had got out of bed, got dressed and made a start, we should have been influenced by the thought that the more time we devoted to our work, the more satisfactory the result would be. By an effort of will we have chosen the course which is less instinctive, less pleasant, but more beneficial in the long run, that is to say, the worthier course.

Sometimes, however, we decide promptly without deliberation. We decide because we feel that the matter must be settled one way or the other, or because of the unpleasantness of suspense and conflict.

From what has been said already, it will be seen that a strong-willed person is one who is influenced by a remote good and acts accordingly, while the weak-willed is one who is swayed by the desire of the moment.

The volitional control of the display of our feelings is of great social significance. We are taught, and rightly so, that to show signs of anger or fear is wrong because it indicates defect or weakness of will. Similarly, we inhibit manifestations of pain and mental suffering. We also exercise the will beneficially on the intellectual processes when we concentrate on the work before us and ignore the influences that tend to deflect us from it.

Strength of will is largely a matter of training. Good habits make it easy for the will to assert itself when the occasion arises.

Actions may be too hasty or impulsive owing to inadequate deliberation or other cause, or they may be delayed because of retardation of mental processes.

In certain forms of mental disorder, such as dementia praecox, voluntary action may cease to function altogether ; in manic states, control may be lost and, in depression, it is much retarded. In the feeble-minded the will is poorly developed, and mental defectives are often unduly responsive to suggestion and readily influenced to the commission of evil.

**Voluntary and Involuntary Action.**—When we think of some object, say a certain picture on the wall, we are apt to turn or point in that direction ; similarly, when we intently follow a football match, we may in our enthusiasm kick the person sitting alongside us, or, when narrating an exciting occurrence, we may repeat some of the movements that formed part of the incident. This is particularly so in the case of children whose vocabulary is limited and who of necessity call in the aid of gestures and demonstrations to express their thoughts. From such behaviour we conclude that certain ideas tend to pass into movement or action. Such actions take place without a conscious effort of the will and are simple instances of involuntary behaviour.

Another instance of involuntary behaviour is seen when we proceed, while engaged in conversation, to pick up a pin off the floor, button up our jacket, etc. We become conscious of the pin on the floor or the unbuttoned jacket and deal with them without any definite resolve and without interrupting our conversation.

There is, however, a more complex type of involuntary action, namely, where a certain action is performed against the will or desire of the individual. For example, we may wish to restrain a sneeze or a cough while in church. To cough or sneeze would afford us relief, but we do our best to restrain it. Under ordinary circumstances we may succeed in doing this, but, if the irritation is intense, any attempt to repress it only makes the subsequent explosion worse. The sneeze or cough takes place involuntarily.

Another form of involuntary action is that in which the will is overcome by an overpowering idea. Notwithstanding a determination not to perform a certain act, the idea prevails and leads the individual to act in some particular way. Where an idea dominates the will in this fashion, it is spoken of as a fixed idea or **obsession**. Under the influence of such ideas individuals may be impelled to perform harmless acts, such as touching objects, or more serious ones, such as precipitating themselves from heights or committing homicidal attacks on persons near and dear to them.

Voluntary action results from voluntary decision. We deliberate over a thing and make up our minds as to what we are going to do. When we deliberate, we consider certain alternatives and finally decide to do this rather than that. Sometimes we act before deliberation has been completely carried out. This may happen when we have to decide one way or another but come to a decision too quickly, being impatient and unwilling to tolerate further suspense, which is always unpleasant. We then permit ourselves to be swayed by the motive that is temporarily dominant. An act performed without adequate deliberation is called an **impulsive act**.



### Desire.

Among animals there are few desires apart from those prompted by instinct and appetite. In the human infant too, desires are largely limited to those of appetite. At first, the mother's breast or the feeding bottle seems to be the only thing for which the infant strives. Later, he shows an interest in other things as well, in toys for example, so that, when shown something he does not want, he cries and reaches out for something else. With the expansion of the process of thought, his desires increase and become more complex.

While in childhood desires are of a fleeting or capricious character, coming and going, the desires of adolescence take a more definite shape and are more persistent. The boy who wishes to become an engineer keeps this wish in the foreground of his thoughts. Later, when he starts his studies, he devotes himself to the realisation of this desire. Mental disturbances, often referred to as **maladjustments**, may result from the failure to realise that many of our desires must remain unfulfilled. It is seldom one finds a completely satisfied person. The satisfaction of every wish seems but to engender a new one. The result is ceaseless and vain striving and disappointment. The evil seems to lie in the extravagance of our desires and expectations. The realisation of modest aims and ambition will yield a quiet satisfaction and peace of mind, that is, real happiness. Struggling or hoping for what is beyond us, with the inevitable frustration that must follow, is a cause of a great deal of the prevalent mental ill-health. Some pursue the unattainable in real life until, as we shall see later, they find fulfilment in the realm of phantasy, e.g., in delusions.

Nevertheless the truth is that without desires and aims life would be intolerable. Moreover, nothing is properly prized or enjoyed without striving for it. The obstacles to be overcome before the aim is achieved, the anticipation of success, give a zest to life, although very few of the things we desire and perhaps, in due course, obtain, fulfil our expectations.

## CHAPTER XLI.

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### **PERSONALITY AND CONDUCT—DEVELOPMENT OF THE MIND.**

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#### **Personality and Conduct.**

The personality or character of an individual represents the sum total of all his qualities, innate and acquired, and is largely revealed in the manner in which he adjusts himself to his environment.

Early training and example have much to do with the evolution of character and preparation for life and, once habits and standards of conduct are formed, it is difficult to effect a change in them. Every thought, every word and every deed in early life is a brick that goes to construct the edifice of character.

Our conduct through life is largely determined by the ideals and sentiments that are inculcated in childhood. The foundations of love of justice, hatred of cruelty and dishonesty, dislike of uncleanness, in other words, the qualities that influence our every action, are laid in the early formative years of life and are derived from those around us.

The sentiment of self-respect is a powerful aid to good conduct. The child is sensitive to the expressions of adults towards him. These may be expressions of satisfaction with a good deed, or of disapproval of what is unworthy. The former increases his pleasure, the latter adds to his sense of remorse or failure. As he grows older he realises that approval and censure respectively represent the judgments of society, of the world at large. With such training he finds it less difficult to conform to traditional standards of morality and duty. Indeed, he will not require the judgments of society in regulating his conduct. He learns to pass judgments on himself and makes himself subservient to his own conscience; in other words, he develops the sentiment of self-respect.

Intelligence, while not essential in forming character, is certainly an important factor. On the other hand, mediocrity or appreciable lack of intelligence may carry certain disabilities with it. The stupid are inclined to be tactless because they lack imagination; they cannot place themselves in the position of others. However, persons of modest intelligence have fewer conflicts in life, smaller ambitions, and thus may lead stable lives and possess quite agreeable personalities.

Temperament, as we have seen, may be a strong determinant of conduct. The habitually jovial seldom lack friends and are less likely to create for themselves situations that will cause maladjustment in life. The moody and the choleric or irritable, on the other hand, are liable to conduct that can bring much unhappiness in its wake.

There is evidence that the secretions of the ductless glands have a strong influence on temperament and behaviour.

We speak of a man whose conduct is stable and consistent, who is always himself, as possessing a well-integrated personality. In most people, however, one may observe two selves or personalities. Thus the man who follows a certain standard in his business relations may have quite another standard of behaviour in his home life. A man may have one vocabulary for his home life and quite another for his club. The milder forms of such inconsistencies are negligible, and it is only in their more glaring manifestations that we recognise evidence of what is described elsewhere in this book as dissociation.

Our conduct in life depends on two factors, native endowment and environment. Our temperament is to a large extent innate; so is our intellect. Yet even these are malleable by environmental influences. We hardly realise the extent to which we absorb the ideals of the society in which we have grown up. To appreciate the extent to which a man makes his own, the standards of morals and decency in which he is reared, he need but venture among races on a lower plane of civilisation.



### Development of the Mind.

Before birth, mental life is assumed to be restricted to a state of semi-consciousness. For some time after birth it is not much in advance of this.

The prolonged infancy in the higher forms of life is a notable phenomenon; lower forms are much more fully developed at birth. The fish swims about and finds its food the moment it is hatched. Birds take longer, and kittens and puppies longer still to fend for themselves. The human being takes longest of all, and is helpless for months and immature for many years. This slow growth of maturity and prolonged dependence of the individual is of great social significance because it forms the basis of family life.

During the first year, development is chiefly noticeable in the co-ordinating movements; head balancing, sitting up, maintenance of equilibrium and, with assistance, walking. Walking precedes talking. Talking as such is hardly present before the latter half of the second year. Among the mentally backward both walking and, even more so, talking are delayed.

In mental development two factors are continually at work, namely, the inborn capabilities and the environment. A child's mental activities are stimulated by the action of the surroundings on his senses, feelings and natural impulses.

In the acquisition of language man proclaims his supremacy over all other living creatures. Its beginnings are represented during the first few weeks in crying. After that, about the third month, comes babbling. These sounds become differentiated, so that they are not the same in such differing states as hunger and pleasure. They take the form of cooing, squealing and other vocal manifestations. Certain sounds become associated with certain objects, needs or discomforts. Thus the child will turn towards the clock if you say "tic toc". When the object is seen or the sensation is felt the sound is uttered. The child gradually comes to observe the gestures and words of those around him associated with their various acts. These words are in due course sufficient to

elicit the appropriate act. In the next stage, i.e., the last quarter of the first year or a little later, the first words which make sense are spoken by the child, such as "mama" and "dada", etc. The words are uttered monotonously and repeatedly as if they afforded some pleasure. Nouns and verbs used in pairs, such as "want sweetie", are the next to be employed.

At the beginning of the second year, the so-called naming function makes its appearance. The child learns that every object has a name. This results in a rapid increase in vocabulary. In the acquirement of language the child shows to what extent its mental development is dependent upon the environment. The same applies to intelligence and feeling. Both the intelligence and feeling grow through human contacts. The more extensive these contacts, the more noticeable does this growth become.

Between the ages of two and four the child learns to use his will for the purpose of attaining an end. This is a difficult period and is sometimes spoken of as the age of "defiance". We are only too familiar with the child who continually shouts "I want", and who replies to most suggestions with an emphatic "no". Although this is an unattractive feature in the child, it has a positive value in the development of the will.

The next stage in development, the period between three and six years, has been called the "questioning age". This is the period of almost unceasing interrogation—why? when? who? what? Different explanations have been given for this characteristic feature, sometimes so exasperating to the person who is expected to supply the information. It has been regarded as a form of curiosity comparable to that of the scientific investigator in search of knowledge.

At this stage the child is still restless and distractible. His activities are not purposeless, but he lacks the power of attention and sustained application. He is, however, very susceptible to external influences and, tactfully handled, will



readily submit to the wish of others. Emotional attitudes developed at this time become established habits, so that correct handling of the child at this stage is essential for its future adjustment. The results of different investigators show that the foundations of most behaviour difficulties in later life are laid down at this period. In addition to home influences, those of the school, playmates and public opinion begin to make themselves felt.

At this time the child's world is in large measure one of phantasy or make-believe. There is not a clear distinction between fact and fancy, between "true stories" and "fairy stories". It is necessary to allude to this feature in child psychology as petty untruthfulness may be quite innocent and free from deliberate evil. Learning to distinguish between true and false, fact and fancy, is a long, tedious process. Even as adults, we are not free from self deception. We love to identify ourselves with persons whom we admire. How often in telling a story do we improve upon it by adding our own little fabrications.

Important elements in the foundation of behaviour are laid down during this period. Up to now there has been only a subjective feeling of moral sentiment ; the child has regarded another as bad or as naughty because he has struck him or taken something from him. At this stage, however, he develops an objective appreciation of right and wrong. He learns that one thing is approved and another is not.

The next stage of mental development is the period between eight and twelve years. This is the period of rapid growth, much activity, and freedom from adult supervision. Boys, influenced by their choice of literature or in imitation of persons older than themselves, are fond of forming groups governed by various codes and standards of honour. Individually they show a tendency to the accumulation of property as revealed in bird nesting and collecting cigarette cards or photographs of favourite sportsmen. The activities of girls are more of a domestic character.



This is also an age at which certain influences may impart a twist to the normal development of the mind, more particularly in the case of the only child. Excessive solicitude and indulgence on the part of parents is apt to induce such qualities as selfishness, sulkiness and intolerance of correction. The sense of dependence is unduly and unhealthily cultivated in such a "spoilt child". Such defects as squint, stammering and physical deformities are liable to give rise to feelings of inferiority and indirectly to behaviour difficulties. Compensatory reactions to such defects may take the form of stubbornness, opposition, deceit and other undesirable character traits. Thus the stammerer, sensible of his defect which prevents freedom of expression, may develop an irascible temper and insolent demeanour or behave like a bully.

The period of puberty and adolescence is characterised by well-marked physical and mental development. An increase in glandular activity accentuates these developmental changes. This is particularly noticeable in the sphere of sex. In boys there is a tendency to self-assertion and other methods of obtaining the approbation of the opposite sex. Sports and games offer opportunity for such displays. In girls the transformation is not less marked. There is a greater measure of self-consciousness, and new interests having a sex significance are developed. Girls mature much earlier than boys and are more preoccupied with such manifestations of sex feeling as frocks, cosmetics, singing and dancing.

Youth is already giving a thought to the future, about his vocation in life. Among those adolescents who are above average intelligence there may be a tendency towards philosophical speculation. Copy book maxims no longer satisfy him in matters of conduct. This is indeed a time rich in abstract thinking with the result that extravagant theories of life are not infrequently accepted without due reflection. Generally speaking there is what may be termed a state of mental unrest incidental to this period, a state of affairs requiring tactful handling and judicious direction. Ambitions and expectations are often far in excess of capabilities. There

is a temporary disturbance of balanced thinking. In cases where neurotic tendencies in earlier childhood have been overlooked, these are liable to become accentuated at this "stormy" period and to give rise to various maladjustments. Not a little of the so-called adolescent instability is really traceable to faulty mental attitudes of a much earlier period.

The intelligence of the adolescent, that is to say, his intellectual capacity, is equal to that of the adult. Towards the end of adolescence the development of the mind, in so far as this is dependent on growth, ceases and subsequent additions to mental equipment merely represent knowledge and skill accumulated as a result of experience and learning. At the close of the adolescent period aptitudes have revealed themselves, vocational aims have been determined and inclinations and tendencies have become set.

## CHAPTER XLII.

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### **THE UNCONSCIOUS MIND.**

THEORY OF THE UNCONSCIOUS—MENTAL MECHANISMS—  
DREAMS—PSYCHO-ANALYSIS.

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#### **Theory of the Unconscious.**

In the year 1893, Professor Sigmund Freud, of the University of Vienna, was impressed by the significance of the recovery of a hysterical patient after her memory of an emotional experience had been recalled while she was in a hypnotic trance. The experience had apparently been forgotten and the patient had no memory of it while she was in a state of normal consciousness. The fact that the memory of an event which had been forgotten might be revived, and other phenomena which had been observed to occur during hypnosis and in other conditions suggested that, in addition to the manifestations of the working of the mind of which we are aware, there was another part of mind in which other mental processes occurred of which we were unconscious and over which we had no control. Professor Freud continued his researches into this branch of psychology and, more than thirty years ago, he enunciated the theory of the unconscious mind. Although all his deductions have not been universally accepted, it is generally agreed that his theory is the most important contribution to our knowledge of psychology that has been made for many years. His researches have given us a new conception of the activities of the normal mind; they have also enabled us, for the first time, to comprehend the meaning of symptoms met with in mental disorder and have provided a new and rational method of treating some of its forms. The science of psychology had previously been limited almost entirely to the study of processes occurring within the realm of consciousness. Introspection, which had been one of the chief methods employed in investigating the working of the mind, had provided most of the material upon which the principles of psychology were based; because its scope was



limited to mental processes of which the individual was aware introspection had resulted, however, in too great emphasis being placed on the activities of the conscious part of the mind.

In order to explain certain processes and to enable us to comprehend mental phenomena as a whole it is necessary to assume the existence of an unconscious part of the mind. According to Freud, the unconscious mind is closely associated with the primary instincts and the powerful emotions attached to them, and its influence is actually more important than that of the conscious mind.

The conscious mind is composed of the sensations, emotions, memories and thoughts of which we are aware at the moment ; it may also be regarded as including the so-called **sub-conscious**, a part between the conscious and unconscious, which contains the innumerable impressions, such as the pressure of one's clothing, the ticking of a clock, etc., which do not attract our attention but are constantly entering and passing through our minds, apparently unnoticed

The unconscious mind is the part of which we are unaware and which is in control during sleep and states of anaesthesia. It includes what has been termed the **preconscious** and the true unconscious. The preconscious consists of memories, such as our knowledge of arithmetic, history and past experiences, which, although not at the moment occupying consciousness, can be recalled or revived at will. The true unconscious is composed of a mass of instinctive tendencies, chiefly sexual, unpleasant memories, fears and unfulfilled desires which have been driven out of the conscious part of the mind because they were too painful to be allowed to remain in consciousness or because they could not be acknowledged on account of their incompatibility with the moral or conventional standards recognised by the community and accepted by the individual. The things which are forced out of consciousness in this way are said to be **repressed** and many of them persist in striving for expression in spite of efforts to keep them out of consciousness. They cannot be voluntarily recalled, however, and they are permitted to enter the conscious mind only in a distorted

or symbolic form during dreams and states of impaired consciousness. Though we may not realise it, this repressed material exercises a constant influence on our minds ; we imagine that we have complete control of our thoughts and actions, but this belief is to some extent erroneous as we often act involuntarily from motives of which we are unaware.

The contents of the unconscious may give manifestations of their existence in many ways, and certain terms are used to denote the various processes or mental mechanisms by which they express themselves.

### **Mental Mechanisms.**

The mind contains a mass of ideas, associated with certain objects or experiences having a strong emotional tone, which are assembled together to form separate groups, called **complexes**. There are innumerable complexes of every kind in both the conscious and unconscious minds, and every one has its attached emotion and urge to action ; many of them centre round some dominant thought or experience and exercise a strong influence on our emotions and conduct. The thoughts of a man in love are absorbed by a complex of ideas associated with the object of his admiration and he tends to regard everything only in relation to his beloved. A person, who is a football enthusiast, has a football complex ; anything to do with the game attracts his attention to the exclusion of other matters and he may be interested in the newspapers, the weather and other matters even remotely associated with his complex only in so far as they concern the game.

Many of these complexes are opposed to one another ; those associated with the primary instincts, particularly that of sex, are often incompatible with those concerned with social obligations, and a duty complex is often opposed to one of pleasure, e.g., in deciding whether to attend a lecture or to go to the pictures. Such a disagreement between two opposing complexes is called a **conflict** ; the state of indecision, which often accompanies a conflict, causes an unpleasant feeling of tension which persists until a choice has been made between the two alternatives.



Conflicts may take place in the conscious mind and be solved in a healthy manner ; the individual realises that both objects cannot be attained and one is abandoned after deliberation. When a conflict cannot be solved, it may be evaded by banishing the incompatible or intolerable complex to the unconscious part of the mind and preventing its return to consciousness, except in a disguised form, by means of an opposing force or resistance. The term **censor** is applied to this hypothetical barrier. In these circumstances, although the incompatible complex has been driven out of the conscious mind and cannot be voluntarily recalled, it continues to exist in the unconscious. The unconscious mind is full of complexes thrust out of consciousness because they were disgraceful and unconventional or unpleasant and painful. Energy may be wasted in keeping these buried complexes out of the conscious mind by the agency of the censor, and the conflict may continue to influence our thoughts and actions indirectly, and even produce states of mental disorder. The process of reconciling opposing complexes is constantly going on in our minds ; with some, e.g., those associated with the sex instincts, repression is necessary and the energy attached to the repressed tendency may be diverted and find a healthy outlet in work, hobbies, games, philanthropic duties or other activities. This process is called **sublimation** and it should not be regarded as a morbid method of solving certain conflicts. In other cases, however, a conflict may manifest itself in various ways by affecting behaviour and habits ; or the individual may involuntarily resort to alcohol or drugs or pass into a state of mental disorder in order to escape from a conflict.

Repressed material may express itself in consciousness in various ways. It may be replaced by the assumption of the opposite quality to that of the repressed complex, e.g., a sad person may appear to be jovial and boisterous. One who has repressed ideas of his own incompetency may assume an arrogant and domineering manner, and excessive prudery is sometimes observed in elderly spinsters. Repression may also be shown in the tendency to forget incidents which are unpleasant or disgraceful, such as the name of a person one dislikes, the keeping of an unwanted appointment, or the



payment of a bill. The emotion associated with a repressed complex may become displaced from the original cause and attached to something associated with it, usually something less distressing, e.g., a soldier hit by a shell while crossing a field may develop a dread, not of shells, but of open spaces. Repressed material may manifest itself by means of processes termed mental mechanisms such as dissociation, projection, rationalisation, compensation. It may also find expression in the form of symptoms of mental disorder.

**Dissociation** is a condition in which consciousness is divided into two or more parts each of which is isolated from the others and pursues its own ends independently. This form of mental mechanism avoids conflicts by keeping opposing complexes out of contact with one another and preventing one even being aware of another's existence. In dissociation, a repressed complex may evade the censor and exist in its own separate sphere of consciousness without being subject to the control and reasoning of the normal conscious mind, or the unconscious part of the mind with its complexes may even usurp the conscious mind and take its place for a time.

Dissociation is seen in ordinary life and it is also a common condition in states of mental disorder. One sees it in the incapacity of the lover to appreciate, or even to perceive, the imperfections of the object of his infatuation, a state which can be explained only by the assumption that his love complex occupies a part of the mind which is dissociated or detached from the influence of the normal conscious and rational part ; the pillar of the church who does not realise that his business sharp practices are out of harmony with his religious professions is also an example of dissociation.

**Sleep walking** is a condition of mental dissociation in which a part of the mind separate from normal consciousness takes command during sleep and controls the person's behaviour.

Dissociation is also the explanation of some of the cases of mysterious disappearance, reported in the press from time to time, in which an individual wanders away from home and,

on being found, appears to have forgotten his name and the circumstances of his previous life. In some cases, a condition of this kind, called **double personality**, continues for long periods and the individual finds employment and accommodates himself to new surroundings, apparently oblivious of his previous existence. A description of a fictitious case of double personality is given in Stevenson's book, "Dr. Jekyll and Mr. Hyde".

In schizophrenia, a common form of mental disorder, the patient's emotional condition and conduct may be quite out of harmony with his ideas or delusions; the patient may imagine that he is a king but will see nothing incongruous in begging for the stub of a cigarette and will not protest when asked to scrub the floor.

Dissociation is common in hysteria and the unpleasant complex may manifest itself in some symptom of bodily disease, such as paralysis or loss of sensation. This mental process is called **conversion**.

In **projection**, the incompatible complex is also split off and appears as a separate part of consciousness, but it is not accepted or acknowledged by the individual and is projected or regarded as belonging to some one else, real or imaginary. Projection is common in mental disorder and is seen in the form of imaginary percepts and delusions. Patients imagine that they hear other people's voices accusing them of misconduct, whereas it is often the voice of their own consciences which has been projected; they may also imagine that people are conspiring against them.

**Rationalisation** is another mechanism which may be observed both in ordinary life and in mental disorder. The term is applied to the tendency to invent reasons other than the real ones to account for our actions. A man who has a craving for alcohol will assert that he wants a drink in order to warm or to cool himself, to stimulate his energies or to put him to sleep; a bad workman often blames his tools, and a tennis player off his game is apt to complain of the bad condition of his racquet.

In mental depression, a patient tends to develop delusions of unworthiness or disease in order to account for his state of misery. Patients are also inclined to misinterpret ordinary occurrences to accord with their delusions, the so-called delusions of reference.

**Regression** is the term applied to a condition in which dissociated complexes largely occupy the mind to the exclusion of normal consciousness. The patient loses touch with reality and exists in an imaginary world of his own creation often resembling that of the period of childhood. In this state a free rein is given to the repressed complexes which act without restraint.

**Compensation** is the term applied to the mechanism by which the individual attempts to compensate or make good for a repressed feeling of deficiency or guilt by the assumption of the opposite quality in an exaggerated degree or by symbolic affectations in demeanour or conduct. Thus a person who is unconsciously ashamed of his sexual desires may show excessive prudery.

### **Dreams.**

Repressed complexes in the unconscious mind may manifest themselves through the medium of dreams when conscious control is abolished or weakened. Some dreams are related to matters which have engaged our thoughts during the day, such as unsolved problems and unfulfilled wishes. There are others, however, which are composed of repressed desires and fears which cannot find expression during waking hours while the censor is vigilant, and they are usually of an absurd and fantastic type in which we undergo impossible experiences. This type of dream may be interpreted as representing wish fulfilments in which desired objects are achieved in a disguised or distorted form.

The Freudian school of psychology maintains that, while there is no need to hide innocent and unobjectionable thoughts and desires, there are others of another type which are prevented from entering the fully conscious mind because of the opposition of the censor. These thoughts, which consist of repressed complexes, particularly those of a sexual nature,



gain admittance to our minds during dreams when consciousness is impaired and the censorship relaxed but, even then, they are allowed to appear only in a disguised or symbolic form. Just as in ordinary conversation we resort to euphemisms or use symbols to denote something that, expressed in plain words, might be regarded as indelicate or objectionable so, in dreams, we find that objectionable complexes are represented in a disguised or symbolic form. In this connection it is significant that children, who usually feel no need to repress their natural desires, seldom have dreams which are distorted ; their dreams are as candid as their conversation.

The study of dreams has revealed that their composition as narrated by the individual, the so-called manifest content, does not represent the real meaning but that it contains a hidden meaning, called the latent content, which consists of repressed complexes, which have appeared in the dream in the form of symbols, i.e., images representative of ideas. The real meaning or latent content of the dream is revealed only by interpreting the symbols which appear in its manifest content.

### **Psycho-analysis.**

Psycho-analysis is a method of treatment which is based on the Freudian theory of the unconscious mind. It is assumed that the symptoms of mental disorder are caused by repressed complexes and conflicts. The patient's mind is explored and its contents are analysed with the object of obtaining information regarding lost and apparently forgotten memories of past experiences, emotions, motives and wishes which are exerting an influence on his conscious mind and conduct. When these have been discovered and brought back to the patient's consciousness and their connection with his symptoms explained, the knowledge may help him to understand the reasons for his abnormal condition and enable him to solve his difficulties and to adopt a more rational and healthy mode of life.

Free association, word association and dream analysis are the terms used to denote the methods by which the unconscious mind is explored.

In the **free association** method, the patient lies on a couch in a darkened room protected from any disturbance and he is told to let his thoughts wander and to relate to the doctor whatever enters his mind, however irrelevant, nonsensical or objectionable it may seem. The information obtained by this method may give clues with regard to the patient's train of thought and repressed complexes.

In **word association**, a long list of separate and disconnected words is read out to the patient, who is told to respond by giving the first word which comes into his mind after hearing the one read out to him, the stimulus word. Ordinarily, the response to the stimulus word is immediate and consists of some word obviously associated with it, but, if the response is delayed, hesitating or irrelevant, there is reason to suspect that the stimulus word has awakened a repressed complex. For example, if, out of a long list of words, the patient responds by showing delay and giving "deep" as his response to the word "water" and also by giving retarded responses to associated words, such as "lake" and "swim", he might have a complex associated with drowning.

In the **analysis of dreams** the patient is told to make a record of his dreams immediately on waking. The latent content, or real meaning, of the dream is deduced by interpreting the symbolic representations of his repressed complexes.

Psycho-analysis is a difficult and lengthy method of treatment, entailing frequent interviews with the patient over a period of weeks or months, and it is necessary that the patient should co-operate fully with the doctor and understand the objects of the investigation. It is sometimes effective in curing cases of minor mental disorder, such as the psychoneuroses, but it is of little use in most of the major forms. Patients who are suffering from acute phases of mental disorder and those who are unintelligent, unwilling to co-operate, or are over forty-five years old are usually unsuitable subjects for this form of treatment.





# **PART V.**

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## **MENTAL NURSING.**

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### **CHAPTER XLIII.**

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#### **THE PRACTICE OF MENTAL NURSING.**

RELATION OF NURSE TO PATIENT—METHODS OF TREATMENT.

##### **The Relation of Nurse to Patient.**

The care of the mentally disordered is one of the most difficult branches of the nursing profession. The work not only requires knowledge and experience of a large variety of abnormal conditions, bodily as well as mental, but it also demands the exercise of qualities of tact, initiative and resourcefulness to a greater extent than is usually necessary in other departments of nursing.

The mentally disordered, in addition to their mental abnormalities, are subject to all the various bodily diseases which are common to the rest of the community. They also show anomalies of personality, temperament and behaviour which complicate and increase the difficulties of nursing and often necessitate the use of special methods suited to the individual case. The mental nurse has frequently to carry out her duties with patients who will not co-operate or who are even actively antagonistic. These conditions tax her patience and ingenuity, and she may have to exercise her powers of persuasion or devise modifications of the usual methods of treatment. She also learns how to gain the confidence of patients and to overcome the various difficulties which she encounters from time to time. In addition, she is liable to be confronted at any moment with unexpected accidents and emergencies of various kinds which demand quick decision and immediate action. These experiences provide numerous opportunities for the exercise of her judgment and initiative,

and enable her to acquire an ability to deal promptly with the numerous and varied disconcerting situations which arise in the course of her work.

Those who have had no experience in the nursing of mental cases are inclined to regard a state of mental disorder as dreadful and mysterious. Owing to their lack of familiarity with such cases they do not know what attitude to adopt, and they are apt to approach the patient with trepidation and in a state of apprehension which renders it impossible for them to obtain his confidence and makes it difficult for them to carry out their duties efficiently.

The nurse should treat a mental patient as a reasonable being so far as it is possible for her to do so. She must be careful to avoid any suggestion of favouritism with regard to any particular patient, and she should not allow herself to show an antipathy to any individual; she should also try to hide any disgust or resentment which she may feel as the result of a patient's rudeness or offensive behaviour. She should not ignore the irrational statements of those who are deluded but, at the same time, she should not pretend to agree with them, and she must not laugh at them or attempt to argue with patients about their false beliefs. Part of the definition of a delusion is that it is inaccessible to argument, and attempts to convince a patient that he is mistaken would usually be futile and only annoy him unnecessarily.

Treatment may be directed either towards the removal of the cause of the condition or to the relief of symptoms. The former method, which is the more effective when it can be employed, consists of measures such as the treatment of syphilis or the withdrawal of alcohol in cases where the illness has been caused by either of these conditions. In functional psychoses, an attempt should be made to correct the morbid manifestations by psychotherapeutic methods, i.e., treatment applied through the mind.

A nurse should continue to study the subject of her profession after she has obtained her certificate of proficiency, in order that she may keep in touch with recent advances and new methods of treatment.

### Methods of Treatment.

Methods of treatment may be classified as physiotherapeutic, psychotherapeutic, medicinal and surgical.

#### Physiotherapy.

Physiotherapy is treatment by the use of agents such as baths, massage, electricity, light and physical exercises. The methods of using some of these agents have been described in other chapters.

#### Psychotherapy.

Psychotherapy means treatment applied through the mind. It is based on the belief that mental disorder and its symptoms are the result of faulty mental processes and that the proper treatment is, therefore, through the mind. It includes such measures as suggestion, persuasion, re-education, occupation and recreation.

**Suggestion** is one of the oldest and most generally used methods of treatment in the practice of medicine. It has been employed for ages, though often unconsciously, by doctors, nurses and others, and it is often an important factor in the success of treatment by drugs or other means. It has been defined as "presenting to a patient an idea which he accepts in the absence of any adequate logical ground for its acceptance". It largely consists in the assumption of an attitude of optimism and in the inculcation of this feeling in the patient; he is assured that his symptoms will disappear and that he will recover; emphasis is laid on any favourable indications and the importance of the opposite is minimised; and attempts are made to divert the patient's thoughts from himself and his illness. It is essential for the success of this method that the personality of the nurse should be such as to inspire confidence in the patient. The results of suggestion are, however, often only temporary, as it does not treat the cause of the condition but only the symptoms existing at the time it is employed. **Hypnotism** may be used as a medium for the application of suggestion. Persons who are in a hypnotic state lose conscious control and become subject to the control and suggestion of the hypnotist. This method requires the patient's voluntary co-operation and, with the large majority of patients in mental



hospitals, it is difficult or impossible to employ it because of their failure to co-operate. It is, however, sometimes used with success in some forms of minor mental disorder and in cases of addiction to alcohol or drugs.

**Persuasion** is allied to suggestion but, in this method, the patient is given logical grounds for the acceptance of the idea presented to him. The cause of his symptoms is explained, and the patient is encouraged to use his reasoning and judgment in order to arrive at logical conclusions regarding the nature and manifestations of his illness. The value of this form of treatment is limited by the fact that many forms of mental disorder are caused by emotional and instinctive anomalies and not by faulty reasoning.

**Re-education** is a method in which the patient is informed of his emotional and instinctive tendencies and their effect, and an attempt is made to teach him how to adopt a more rational attitude and to attain a more satisfactory adjustment to his surroundings. A knowledge of the patient's past history and the contents of his unconscious mind is necessary for the use of this method.

The theory and methods of psycho-analysis and of occupational therapy are dealt with elsewhere.

### **Medicinal Treatment.**

The administration of drugs is used chiefly for the relief of symptoms of mental disorder and the treatment of its physical complications. With the exception of those forms which are associated with syphilis and, occasionally, conditions due to anomalies in the secretion of the ductless glands, drugs have little specific effect on the mental condition. Hypnotic and sedative drugs, such as paraldehyde, chloral, veronal, sulphonal and bromides, are used to procure sleep and calm excitement, and others, such as hyoscine, to diminish motor restlessness. Tonics, aperients and stimulants are also given if needed.

### **Surgical Treatment.**

This is occasionally needed in cases of mental disorder associated with organic conditions of the brain or with septic foci in various parts of the body.

## CHAPTER XLIV.

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### **OBSERVATION AND NURSING OF PATIENTS.**

RECEPTION OF PATIENTS—CARE OF NEWLY-ADMITTED PATIENTS—DISCHARGE OF PATIENTS—GENERAL PRINCIPLES OF MENTAL NURSING.

#### **The Reception of Patients.**

It is important that the first impression which a patient receives on his arrival at the hospital should be favourable, and that it should inspire trust and confidence. Some arrive in an exhausted or confused state ; others may have been deceived by relatives or friends as to their destination and led to think that they were being taken to a hotel or a sanatorium and, when they realise they have been deceived, they are likely to be prejudiced against the hospital and distrustful of everyone in it ; others who realise their condition often come only as a last resort. Gross misconceptions prevail among the general public regarding the treatment of patients in mental hospitals and, as a result, both the patient who is brought to the hospital and his relatives and friends are often anxious and apprehensive. The manner in which the patient is received on his arrival and the attitude of the officers of the institution can do a great deal to dispel such fears and misapprehensions and to reassure the patient and his relatives. A kindly, courteous and sympathetic reception will help to gain his confidence and co-operation which are so necessary for the success of his subsequent treatment.

The usual procedure when a new patient has to be admitted is as follows :—

On the arrival of a new patient at the institution, one of the doctors is immediately notified and a nurse is required to be in attendance. If the doctor is satisfied that the detention documents are in order, he will give instructions that the patient may be admitted. If the patient is violent or resistive, the assistance of other nurses must be obtained. A special

room is usually reserved for the examination of new patients before they are admitted into the ward. The patient is undressed and put to bed. The nurse must then carefully inspect the patient in order to detect any signs of injury or disease such as bruises, wounds, sores, dislocations, fractures (particularly of a rib), skin rashes, swellings, hernia, distension of the bladder, paralysis or wasting ; she must also note any deformities, scars, birthmarks or other abnormalities and the general condition as regards nutrition. It is particularly important that any indications of infectious disease or of vermin should be detected before the patient is admitted into a ward. The temperature, pulse and respiration are also taken and recorded. The nurse should report the results of her observations to the doctor before he examines the patient. After the doctor has completed his examination, he gives to the escort or relatives a certificate stating that the patient has been admitted and specifying any signs of injury or disease which have been observed. It is important that any signs of this nature should not be overlooked, as accusations of ill-treatment may subsequently be made in respect of injuries which had actually been sustained before the patient arrived at the hospital.

After the examination, the patient is given a cleansing bath if ordered by the doctor, who will also inform the nurse whether the patient is to occupy a dormitory or a private bedroom and give instructions with regard to any treatment to be employed. The patient's height and weight should be taken and recorded as soon as possible after admission, and the record should state whether the patient was dressed or in his night clothing when weighed.

The patient's clothing and personal effects must be carefully examined and searched by two nurses, and a record of his belongings entered in a book kept for the purpose and signed by both nurses. A special duplicate book is kept for recording any money or valuables found in possession of a patient on admission, and this record should also be completed, signed by the two nurses and transmitted to the clerk for his



counter-signature when the valuables are handed over ; if no valuables are found, a certificate to this effect must nevertheless be furnished. Letters and documents should be preserved and submitted to the doctor for his inspection. Dangerous articles, such as knives, scissors, poisons, matches, medicines, etc., are removed and stored in the place reserved for them.

Sometimes the patient has been sleepless or has refused food for some days and arrives at the hospital in a state of fatigue or exhaustion ; in such cases, he should be given some light nourishment, properly served, as soon as possible.

### **Care of Newly Admitted Patients.**

A newly admitted patient is usually kept in bed for a few days or longer after his arrival. This allows him to accommodate himself more readily to the conditions and routine of the institution, and also to obtain rest which is often badly needed. It tends to make him realise that he a patient undergoing treatment in a hospital ; it also enables him to be kept under closer supervision and facilitates medical examination. During this period, the temperature, pulse and respiration are taken and recorded every morning and evening, or oftener in cases where the patient has fever or there is reason to anticipate the development of some disease. A record should be kept of the number of stools passed and their character ; a specimen of urine should be obtained for testing, and any pain or difficulty in passing urine should be reported. The quantity of food taken and the amount of sleep obtained should also be noted.

The impressions which a patient receives during his first days in hospital are often lasting ; his treatment during this period is therefore very important. If mistakes are made and the patient is tactlessly and unsympathetically treated, his confidence in the staff may be lost and, as a result, he may remain hostile for a long period and refuse to co-operate with them. Such a state of affairs may bring discredit on the institution and is not only harmful to the patient but also makes it more difficult for the nurses to attend to him.

The nurse will have been informed of the patient's general symptoms and propensities and, although she is not required to make a systematic examination of his mental state, she should, without appearing to be inquisitive, listen to what he has to say and notice his actions and habits in order that she may be able to give an accurate report to the doctor. In making such a report, the nurse should give an account of anything unusual which the patient may have done or said, but, as a rule, she should avoid making deductions from her observations. For example, if he appears to hear imaginary voices, she should report what the patient tells her the voices say and whence he thinks they come. Similarly, if he expresses irrational beliefs, she should note what the patient has said. The emotional state, the behaviour, and the habits as regards eating, cleanliness and sleeping, should also be noted and reported.

Visits from relatives or friends, and the receipt of letters, are often harmful and unsettling to a patient during his first week or two in hospital. The nurse should obtain instructions from the doctor as to who may be allowed to see the patient and how long they should stay. If a visit appears to have a bad effect, the fact should be noted and reported and, if the presence of visitors appears to upset the patient, the nurse may tactfully ask them to leave the ward and give her reasons for doing so.

### **Discharge of Patients.**

When a patient is discharged from the institution under the care of some other person, or is taken out on leave of absence, he must be handed over to the guardian in a perfectly clean and tidy condition. The nurse should draw the attention of the guardian to any rash or marks of injury on the patient and should also carefully note these in her report on that day. She must also hand over to the guardian any clothing or other articles in her charge belonging to the patient, after she has prepared a list of them and obtained the guardian's signature of receipt.



Sometimes, patients who have recovered may leave the institution unattended, and, in these cases, the patient himself should be required to sign a receipt for the clothing, etc., which he receives.

When a patient returns from leave, he should be treated in accordance with the usual procedure for the admission of new patients.

### **General Principles of Mental Nursing.**

It is impossible to lay down general rules suitable for every case, and the needs of each individual patient must be studied as regards diet, exercise, rest, occupation, etc.

Some patients will not co-operate in measures taken for their benefit or treatment, and some may be hostile and resistive. Many do not complain of symptoms of ill-health because they are incapable of appreciating deviations from the normal; others fail to attend to their ordinary needs. The nurse should therefore keep her patients under careful observation in order that she may notice the early signs of any illness, and she should see that they are kept clean, that their bowels act regularly, and that they take enough food. It is not sufficient to serve a patient with food; the nurse should satisfy herself that the patient has eaten it. Some will not take their food, and others may eat only portions of it and leave essential articles of the diet such as green vegetables.

Patients who are acutely ill mentally are often difficult to manage, but many of them may be expected to make a good recovery if they can be tided over the acute stage of their illness. Every effort must therefore be made to conserve their strength by seeing that they take sufficient nourishment and obtain as much rest as possible. Precautions must also be taken to prevent them sustaining injuries. They are sometimes restless, violent, destructive or suicidal but, nevertheless, they should be dealt with as reasonable individuals as far as possible, and attempts should be made to direct their thoughts and conduct into more normal and rational channels. They are often weak and exhausted, and their bodily condition may require special treatment. Those who are confused or delirious should not be left without supervision.



Depressed cases require special observation and care. They should all be regarded as suicidal, and they must be kept under constant supervision and precautions taken to prevent them injuring themselves. They are often reluctant to eat and may refuse food altogether; many of them suffer from indigestion and constipation which require treatment.

Excited, noisy and violent patients should, if possible, be placed in wards reserved for such cases, as their behaviour tends to have a disturbing effect on others. The use of force should be avoided unless it is absolutely necessary, as it often makes the patient more resistive and is the cause of unnecessary struggles in which both the patient and the nurses are liable to be injured; if force has to be used, sufficient assistance should be obtained. The excitement may be treated by prolonged warm baths, occupation and drugs; mechanical restraint should not be employed except as a last resort.

Chronic cases should not be relegated to a class which is regarded as incurable and hopeless with the result that interest is lost and treatment abandoned as being useless. Some of these patients recover after having been ill for many years and in most of them deterioration can be arrested or delayed by occupational therapy and by maintaining their interest in the outside world.

Convalescent patients need special care and should be encouraged gradually to assume more responsibilities and to look after themselves to an increasing extent. Recurrences, however, often occur before recovery is established, and the nurse should look out for any indications of relapse or the development of any new symptoms and report to the doctor if they are observed. Melancholic patients particularly, require to be carefully watched, as they are apt to attempt to commit suicide during the stage of convalescence; some of them dissimulate and conceal their intentions in order to obtain their discharge or a relaxation of supervision, which will give them an opportunity to attain their object.

Further information in regard to the nursing treatment of individual patients will be found in Part VI, in the chapters dealing with the various forms of mental disorder.

## CHAPTER XLV.

### **SPECIAL PRECAUTIONS AND DUTIES.**

FIRE—SUICIDE AND SELF INJURY—VIOLENCE—DESTRUCTIVENESS AND FAULTY HABITS—FALLS—SUFFOCATION—SCALDING — POISONING — BATHING — ESCORT DUTY — PAROLE.

#### **Fire.**

Instructions are laid down as to the duty of the staff should an outbreak of fire occur and the precautions to be taken to prevent such a possibility. These instructions and precautions are to be found in the Rules and Orders for the Management of Mental Hospitals.

All probationer nurses on joining the Union Mental Hospital Service are furnished with a copy of these rules and regulations. It is the imperative duty of every nurse to study thoroughly the instructions specified above and be prepared to carry them out if necessity arises. Ignorance of these rules is regarded as a serious offence.

#### **Suicide and Self Injury.**

A nurse who is in charge of a patient known to be actively suicidal, or suspected of such a tendency, has a very special responsibility and a very special duty to perform.

There is only one way in which to carry out this duty. The nurse must not leave or cease to watch the patient under any circumstances whatever from the moment the responsibility is assumed until such time as the relieving nurse has definitely taken over charge of the patient and thereby assumed responsibility. Experience has shown that patients determined to commit suicide are exceedingly cunning in devising methods of obtaining and concealing, either on their persons or elsewhere, sharp instruments, poisonous substances or other dangerous articles.

To search only the clothing as the patients undress at bedtime is not sufficient. They must be completely stripped and personally searched, as the following example will show :—

A young woman in a mental hospital was suspected of being suicidal and was specially observed. One night, not two hours after she had been put to bed, she became violently ill, collapse took place, which was followed by death. A quantity of arsenic was found in the stomach. At bedtime the patient had undressed as usual, under observation, but had been allowed to retain her stockings, a thin black pair ; under one stocking the patient had secreted a flat packet of thin paper containing a powder with arsenic in it sold for poisoning cockroaches and the like. Lying quietly in bed with her stockings on, and feigning sleep, the patient, under cover of the blankets, had swallowed a fatal amount of this powder.

It is essential that the patients be regularly and thoroughly searched. It is necessary also to search thoroughly the suicidal patient's bed and room, especially at night.

Great care must be taken to keep them from getting possession of anything from which they might be able to make a dangerous weapon. Such apparently innocent articles as a piece of bootlace, string, old rag, or handkerchief, have proved fatal in the hands of a patient determined to commit suicide.

Sudden attempts at self-destruction, by certain types of patients on the impulse of the moment, cannot always be frustrated, but, if close observation is exercised by the nurse and constantly maintained, it should not be easy for the patient to effect his purpose. A chain breaks at its weakest link and, similarly, if observation be interrupted for only a few moments, it becomes ineffective.

### **Violence.**

Violent conduct on the part of patients is often due to some real or imaginary interference with their actions. Certain patients, such as epileptics, are notoriously aggressive as a class ; others may actively resent the irritating and provoking habits of fellow-patients ; and some may become dangerous under the influence of delusions or hallucinations.



Patients known to have violent or homicidal tendencies must be kept under close observation. With some, the violence may be anticipated by noticing a change in their demeanour, and prevented by prompt action. Care must be taken to see that they do not obtain possession of or conceal articles which might be used as weapons to do serious injury to others. If a regular search of the clothing and bedding is made, as in the case of suicidal patients, any articles of this nature should be discovered and removed.

An experienced nurse can do much to prevent the onset of violence by foreseeing possible causes of irritation and by trying to remove them promptly. When, however, her efforts are unsuccessful, and a struggle is unavoidable, she should deal with the situation in accordance with the following guiding principles :—

- (a) Keep perfectly calm and do not lose your temper.
- (b) Endeavour to soothe the patient.
- (c) As soon as it appears that force may have to be used, summon as many nurses as possible ; the mere presence of sufficient odds will, in many cases, deter the patient from engaging in a struggle.
- (d) If the patient has a weapon in his possession, the nurse may try to throw a blanket over his head or protect herself with a mattress or pillow when approaching him.
- (e) If a struggle cannot be avoided, try to grasp the patient from behind, endeavouring to pin his arms to his body ; another nurse should then, also from behind, grasp the patient round the knees ; it is then comparatively safe for a third nurse to approach and hold the patient from in front. In this way the patient can generally be laid on the ground without risk of injuring him, when, if it be during the day time, his boots are at once taken off.
- (f) Never, if it can be avoided, grasp the patient round the neck, and, in locking his arms to the sides from behind, obtain a grip over the forearms if possible.

- (g) Never kneel on the patient's body. This is a most dangerous as well as unnecessary method of control.
- (h) Report every struggle as soon as possible.

No greater amount of force must be used than is absolutely necessary, and the application of force must be discontinued as soon as it is no longer required. Remember that it is fatal to lose the temper; if the temper is lost, self restraint and reason go with it, and the correct method of restraining the unavoidable violence of a patient degenerates into a brutal struggle.

If the methods of restraint as described above are properly employed, the most violent patient will not suffer injury except under most exceptional circumstances. Nurses should remember that the object of the forcible restraint employed is to prevent the mentally sick patient from injuring himself or others, and not to punish him for giving trouble.

### **Destructiveness and Faulty Habits.**

Destructiveness and faulty habits may be symptoms of mental illness, and, by skilful and intelligent nursing, much can be done to minimise them. The patient who is wet and dirty should be made to attend to the calls of nature at regular intervals; the one who is slovenly and careless of his person, who persists in spitting on the floor, or who eats voraciously, devouring his food like an animal and snatching that of others, should be untiringly admonished, firmly and tactfully, and every endeavour should be made to arouse his latent sense of self-respect. If necessary, he may be made to eat by himself. A painstaking nurse who thus uses her initiative and intelligent resources may succeed in rehabilitating to a greater or less extent many patients of this class. By so doing she will benefit everyone in her ward and will be taking a real and active part in the hospital therapy.

Patients who are mischievously destructive should have their activities diverted by the nurse into some harmless, if not actually useful, employment. It is possible, by taking trouble, to train them into better ways by setting them to polish a floor or dust furniture or walls, even if these are already

meticulously polished or clean. At the least, such patients can be given a heap of rags and odd pieces of cloth to pick and sort.

### **Accidents and Emergencies.**

#### **Falls.**

Bruises and slight wounds are frequently sustained by patients in mental hospitals as a result of falls, and injuries of a more serious nature sometimes occur.

Epileptic patients are particularly liable to injure themselves by falling. The precautions to be taken to prevent falls with this class of patient are described in Chapter XXXI.

Defective footgear, untied bootlaces, torn mats, door scrapers, and too highly polished floors are common causes of falls. Old and feeble patients should be specially looked after in a crowd, as they are apt to be jostled and pushed over by others.

The chief serious injuries caused by falls are fractures of the radius and clavicle, fracture of the neck of the femur in old people, and fracture of the ribs when the patient falls against a projection such as the side of a bed ; dislocations of the shoulder sometimes result from falls.

#### **Suffocation.**

Suffocation may be caused by the impaction of food or a foreign body in the air passages, by the inhalation of particles of food, or by the occlusion of the mouth and nostrils.

Impaction of food and foreign bodies in the air passages is specially liable to occur with epileptics, paralytics, and those who are in the habit of bolting their food. Such patients may be given only mince or soft food.

Patients who are unconscious or comatose may suffocate themselves by inhaling particles of food. The heads of unconscious patients should be turned to one side and placed at a lower level than the rest of the body in order to allow the contents of the mouth to run out.



An unconscious patient may also be suffocated by turning on his face and so causing occlusion of the entrance to the air passages. To prevent the occurrence of this accident, epileptics and unconscious patients should be kept under constant supervision.

The emergency treatment of suffocation is first to remove the cause, if possible, and afterwards to apply artificial respiration if the patient does not begin to breathe.

### **Scalding.**

This usually occurs from neglect of the rules for bathing and sometimes causes the death of the patient.

Epileptics must be kept away from baths, boilers and hot water, and they should not be allowed to carry buckets or other utensils containing boiling water, soup, or other hot liquids.

### **Poisoning.**

All poisons must be kept locked up in the cupboard or other place reserved for them, and bottles containing poisons should be kept separate from those containing medicines for internal use.

Nurses in charge of patients in the institution grounds or outside should see that they do not pick and eat poisonous berries or plants.

### **Bathing.**

A printed copy of the rules for bathing is displayed in every institution bathroom in order to remind the nurses of the necessity of carefully observing them. From time to time there have been serious, sometimes fatal, accidents in mental hospitals as a result of neglecting to carry out the prescribed precautions.

The **general rules** for the bathing of patients are as follows :—

- (1) The bathroom door must always be kept locked when the bathroom is not in use.

- (2) The nurse in charge must keep the key of the hot water tap in her possession while bathing is being carried out.
- (3) The articles needed for bathing, such as soap, washing glove, nail brush, towel, should be obtained and placed in readiness before the bathing is begun. A clean towel must be provided for every patient.
- (4) The bath must be rinsed out before use and filled with fresh clean water for every patient.
- (5) The cold water must be run into the bath first, the hot water being added afterwards and thoroughly mixed with the cold until the prescribed temperature is obtained. The temperature must be between  $96^{\circ}$  and  $100^{\circ}$ F. and it must be measured by means of the bath thermometer. In some institutions an automatic mixer is installed and a mixture of hot and cold water at the required temperature is supplied through one tap, but the temperature of the water should, nevertheless, be checked by a thermometer as the automatic controls are sometimes out of order. No patient should be permitted to get into the bath until the temperature of the water has been ascertained.
- (6) The depth of the water is usually about eight inches and should be sufficient to cover the patient's thighs when he is in a sitting posture; the bath should not be more than half filled.
- (7) A nurse must always be present in the bathroom whenever a patient is in it, unless special authority has been obtained to allow the patient to bath himself.

The bathing of patients should be carried out with as much regard for privacy and modesty as possible, and sufficient assistance should always be available. A glove made of towelling or some other material should be used for cleansing the body and a brush may be needed for the hands and feet. Special attention should be paid to the hair, armpits, ears, and external genital and anal regions, particularly in the case of

new patients. The nurse should be specially careful when bathing excited, epileptic and paralysed patients and those who are old or feeble, and should assist them to get into and out of the bath on account of the danger of their slipping on the wet surface and sustaining a fracture or other injury.

After having been bathed, the patient is taken out of the bath and quickly and thoroughly dried. The finger and toe nails are trimmed, if necessary, and the patient is provided with clean underclothing.

The nurse should always take the opportunity provided during bathing to examine the patient's body in order to detect any signs of injury or disease, such as bruises, wounds, rashes or swellings.

The nurse must never leave the key of the hot water tap on the tap or lying about within reach of patients ; she must never rely on her hand alone when taking the temperature of the water and never immerse a patient's head under the water.

In some institutions, shower baths are used for the general bathing of patients who are in good bodily health and capable of washing themselves. The bathing of a number of patients can be carried out more rapidly by this method than with an ordinary bath, and the quantity of water used is less. The temperature of the water discharged from the shower is regulated to the required degree by means of an automatic mixer, but it should, nevertheless, be checked before the patient is allowed to go under the shower. The nurse can form an estimate of the temperature by placing her elbow in contact with the delivery pipe or by holding her hands and forearms under the shower. The floor under the shower often becomes coated with soap and water and very slippery in consequence, and care should be taken to prevent patients falling and sustaining injuries.

### **Escort Duty.**

Nurses may be required to act as escorts to a patient or a party of patients who are being taken to an institution or elsewhere or transferred from one institution to another.



Patients usually travel by rail or motor car, and the clerical staff of the institution, the magistrate, or the person in charge of the patient, will obtain the necessary tickets and arrange for the reservation of accommodation. In some cases, however, the nurse may have to attend to these matters.

The number of nurses required for escort duty depends on the number of the patients, their mental condition and propensities, and the duration of the journey.

The nurse in charge should be acquainted with the patient's condition and habits, and she should obtain instructions regarding any treatment or medicines to be given during the journey ; she must also obtain a supply of any medicines, particularly sedatives, which may be needed. She should see that she has sufficient funds for the purchase of food and for other contingencies and that changes of clothing are provided, if necessary. She is usually given the documents required to authorise the admission of the patient to the hospital on arrival at her destination, and any money or valuables belonging to patients may also be entrusted to her for safe keeping.

The patient should be bathed and dressed in clean clothing, if possible, before starting on the journey, and it is advisable that the nurse in charge should take the opportunity of examining him before he is dressed in order to detect any signs of injury or disease.

The chief dangers associated with the removal of patients are escape and suicide, and the nurses must be constantly on the alert for any indications of such intentions and take precautions to prevent their occurrence. The nurse in charge should make the arrangements necessary to maintain constant supervision by allocating definite periods of duty for every nurse and providing the necessary reliefs. Patients visiting the lavatory should be accompanied by a nurse and precautions taken to prevent a patient locking himself in a compartment. Separate accommodation should be obtained for nurses who are off duty in order to enable them to obtain sleep and rest.

In the event of the escape of a patient or the occurrence of a serious accident, the nurse in charge should obtain assistance from the railway officers or nearest police station and, in the case of transfers, communicate by telegram with the physician superintendent of the institution from which the patient is being transferred.

On arrival at their destination, the senior nurse must report, to the medical officer admitting the patient, any accident or unusual incident which may have occurred on the journey. She must also obtain a receipt for every patient, stating the bodily condition on arrival. The documents brought by the escort include a statement regarding the patient's condition prior to departure, and any evidence of injury not recorded therein will have to be accounted for by the escort.

The escort must also obtain a receipt from the receiving hospital for all clothing and property handed over.

### **Parole.**

The majority of mental patients have to be kept under more or less constant supervision, but there are many who can safely be given a limited degree of freedom under certain restrictions. Patients who are not dangerous to themselves or others and who can be trusted to observe the conditions laid down and to look after themselves, so far as the circumstances require, may be given a certain degree of freedom of movement, called parole. This means that, provided that they undertake to conform to the rules of the institution and to obey the conditions laid down, they are at liberty to walk about the grounds unattended by a nurse ; in some cases, they may be permitted to go beyond the boundaries of the institution, if such an extension of liberty has been specially authorised. The privilege of parole is granted by the physician superintendent and has to be renewed every month. Printed forms, called parole cards, are sometimes provided, on which the rules and conditions are endorsed ; when these cards are used, every patient placed on parole is required to sign one of them and undertake to observe the conditions.

Parole is a privilege which is greatly appreciated by many patients who find constant supervision by nurses and association with other patients in a ward irksome and irritating. With convalescent cases particularly, it also gives opportunity for observing the patient's behaviour and estimating his powers of self control while out of supervision, and so provides valuable information regarding his fitness for discharge.

Every patient who is on parole should be carefully watched, particularly at first, and the effects of his freedom from supervision noted. The extension of his liberty and the need for the exercise of greater self control may reveal tendencies and symptoms which had not been apparent before.

Any breach of the conditions of parole, or complaints by members of the public or others regarding the patient's behaviour, should be at once reported to the physician superintendent.



## CHAPTER XLVI.

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### PRIVATE NURSING.

A mental nurse who is required to undertake the care of a psychotic patient in a private house is likely to find that her duties and responsibilities in such a position are much more onerous than in a mental hospital. She will often be single-handed and will feel the need for experienced assistance ; she will be handicapped by the lack of suitable accommodation for the patient and of the equipment and facilities available in a mental hospital ; and she will have to adapt herself to strange conditions and improvise methods with the material at her disposal. Interference by relatives and friends will sometimes add to her difficulties, and she will need to use tact and discretion in dealing with their suspicions and suggestions regarding treatment ; in addition, the patient is more likely to be troublesome and resistive in his own home than in an institution. If she wishes to gain the confidence of the patient and the relatives, her conduct and conversation must be beyond reproach, as her behaviour will be closely observed and everything she says will be noted. She should try to keep on friendly terms with the inmates of the house without being unduly intimate, and she must never gossip about the patient or the family affairs. She should acquaint herself with the daily routine of the household and avoid disturbing it unnecessarily. It is important that she should loyally support the doctor in attendance on the patient and carefully carry out his instructions as regards treatment, diet and exercise.

Before taking over the care of a private case, the nurse must obtain detailed information from the doctor regarding the patient's habits, propensities, and mental and bodily condition, and she should also ascertain if he is being treated under the provisions of the Mental Disorders Act. If he is not, she must bear in mind that she has no legal authority to detain him compulsorily or to exercise restraint or coercion of any kind.

As a rule a room on the ground floor, if one is available, should be selected for the patient. This position diminishes the risk of suicide ; it is also more convenient in other respects and avoids the unnecessary labour involved in carrying food and other necessities up and down stairs. It is also desirable that the room should be one which is isolated as far as possible from those occupied by other inmates of the house.

The nurse should acquaint herself with the position of any dams, wells or railway lines in the immediate vicinity. The windows should be examined and, with sash windows, it may be advisable to have them checked so that they cannot open more than five inches either at the top or bottom. It is more difficult to make the casement type of window secure without locking them in a closed position. The keys should be removed from doors, and the bolts taken off the inside of lavatory doors.

Dangerous articles or substances, such as knives, razors, scissors, fire irons, blind cords, medicines, poisons, disinfectants, which the patient might use as offensive weapons or as a means of committing suicide, should, as a rule, be collected and kept under lock and key in some place where the patient cannot obtain possession of them. This precaution is very important when there is any suspicion that the patient may be suicidal.

The nurse must closely observe the patient's condition and keep records of her observations in order that she may be able to furnish accurate and detailed reports to the doctor when he visits the patient.

The weight should be taken and recorded when the nurse takes charge of the case, and the patient should be weighed regularly during his illness. The nurse should keep notes of the quantity and kind of food and drink taken, the medicines administered, the amount of sleep obtained, the action of the bowels and bladder, the time spent in the open air, the amount and variety of exercise taken and how the patient occupied himself. It is important that the nurse should note the patient's mental condition and conduct, particularly the development of any new symptoms or indications that he may be dangerous to himself or others. Any struggles or accidents

which have occurred, and any injuries which have been sustained by the patient or others in attendance on him, must be fully described. The temperature, pulse and respiration should be taken and charted regularly in acute and recent cases.

The nurse will find it useful and convenient to keep a diary in which her observations can be regularly recorded. It will serve as a connected account of the patient's condition and progress to which she can refer when necessary and from which she can compile her regular daily report to the doctor. It may also provide valuable evidence regarding the patient's behaviour and conduct, particularly in the event of allegations being subsequently made in connection with any struggles or injuries which the patient may have sustained while under the nurse's charge.

As the nurse is often left in sole charge of the patient for long periods she must always obtain detailed instructions from the doctor with regard to the patient's treatment and the action to be taken in any emergency.



## CHAPTER XLVII.

### **OCCUPATIONAL THERAPY.**

PSYCHOLOGY OF OCCUPATIONAL THERAPY—OCCUPATIONAL THERAPY CLASS—VARIETIES OF OCCUPATION—SELECTION OF OCCUPATION.

Occupational therapy is a form of treatment in which organised work or play is used with the object of curing or alleviating disease or injury. Treatment of this nature is employed in many conditions, e.g., mental disorder, paralysis, heart disease and tuberculosis. In mental disorder, occupational therapy may be regarded as a form of psychotherapy, i.e., treatment which acts through the mind. It must be emphasised that occupational therapy is primarily a form of treatment ; it should be classed with other curative measures such as medicines, suitable food and nursing, and it must be properly prescribed in relation to character, dosage, and control.

There are, however, other advantages which are associated with the use of occupational therapy in mental hospitals. It is a common experience for the ward nurse to find that it is more difficult to deal with patients when they are idle. At these times they are less easily managed. They irritate one another, frequently get into trouble and, as a result, are unhappy and badly adjusted to ward life. When patients are kept occupied, they are furnished with an objective, which holds their attention for the time being and enables them to forget about their own troubles and to ignore irritating occurrences in the ward.

It is a further object of occupational therapy to teach patients occupations which may be financially useful to them after discharge, although many of those taught in mental hospitals are not necessarily profitable when practised commercially. The economic value of a patient after discharge depends upon his ability to earn a living. Some patients are

able to resume their former occupations and maintain themselves without assistance. Many, however, as a result of impairment of their earning capacity, are unable to earn sufficient money for their ordinary needs and have to be assisted by their families or charitable organisations.

The majority of patients in mental hospitals are an expense to the State. This expense is reduced when patients are employed in necessary or productive institutional work, and those who are able to assist in the laundry, on the farm, in the sewing room and in other ways, contribute by their work towards the cost of their maintenance.

Many patients undergo the process called mental deterioration. They become slovenly in their personal appearance and careless in their habits, and the cost of their maintenance is increased by reason of the extra demands which such habits make upon linen and clothing. By means of training it is possible to teach habits of personal cleanliness and tidiness, and to delay, or to prevent, the onset of mental deterioration. The grossly deteriorated patient who is wet and dirty, destructive and unemployed is frequently the product of inefficient mental nursing.

The **objects of occupational therapy** may be summarised as follows :—

- (1) To cure or alleviate the mental disorder.
- (2) To facilitate the management of patients.
- (3) To promote their happiness.
- (4) To increase their economic value
  - (a) inside the institution.
  - (b) after discharge.
- (5) To prevent or delay the onset of mental deterioration.

### **The Psychology of Occupational Therapy.**

In order that the curative effect of occupational therapy may be better understood, it is necessary to give a psychological explanation of the manner in which improvement is brought about,

Mental disorder may be regarded primarily as a failure to adjust properly to ordinary social requirements. Every normal person is expected to conform reasonably to social convention and to the laws of the land. Violent, foolish or criminal behaviour, on the part of a mentally disordered person, may be regarded as a breakdown of the individual's capacity to adjust himself to meet the behaviour requirements demanded of normal people. The outward signs of recovery from mental disorder are mainly a return or increase of the individual's power to conform to these requirements. The process of restoring mentally disordered persons to their former status and usefulness in life is called **rehabilitation**. It is as if the patient were a derailed locomotive which, after it has been put back upon the rails, again serves the purpose for which it was originally intended. The rehabilitated patient is able to behave properly and to earn a living in a socially acceptable way. Occupational therapy is a method by which this process of rehabilitation may be assisted, as it encourages the desire for some form of activity, an urge which is part and parcel of the make up of every normal person in everyday life.

Many people are conscious that they differ from their fellow beings. They realise that they are inferior in various ways, e.g., in physical development or intellectual ability. When consciousness of physical or mental inferiority is exaggerated, abnormal mental processes are set up and may lead to disturbance of the individual's mental stability. Such a state of mind may find relief in proficiency in other directions. For example, the physically inferior person, unable to achieve success in spheres of physical ability, such as athletics, may express himself by the development of latent musical talent and overcome the sense of inferiority in the realisation of his superiority in this field of activity. In mental disorder, this feeling of inferiority is often present. By means of suitably chosen work the patient is made to enjoy work because, with successful accomplishment, comes the satisfaction of work well done. This satisfaction compensates for the feeling of inferiority and tends to raise the patient's self respect.



In other cases of mental disease, the patient's mind is occupied with morbid thoughts to the exclusion of almost all else. These thoughts frequently depend upon delusional ideas of various kinds and, if left alone, the patient tends to indulge in phantasy or day-dreaming, i.e., he retires more and more into a purely imaginary world of his own making. Such patients are self absorbed, reticent, sometimes mute, and apparently indifferent to all that goes on around them. They are quite out of touch with the realities of everyday existence. In cases of this nature, the psychological effect of occupational therapy is to substitute something of concrete and external interest which will take the place of purposeless unprofitable phantasy and give to the patient points of contact with the world from which he has withdrawn.

In cases where prominent features are excitement, noisiness and talkativeness, e.g., in acute mania, suitable work has a soothing effect upon the hyperactivity of the patient. Manic patients are unable to fix their attention for any useful length of time ; they are said to be distractible. The type of work suitable for such patients is of a simple stereotyped nature, where the constant repetition of easily controlled movements induces a soothing state of monotony. Examples of this type of work are knitting, unravelling socks and stringing beads.

With wet and dirty, unoccupied and deteriorated patients, every effort should be made towards delaying or arresting the process of deterioration. **Habit training** simply means that patients are taught ideas of cleanliness and order, and is definitely a form of occupational therapy. This process of teaching is mainly the repetition of a daily routine in which the personal toilet plays a large part. This teaching must be done by the nursing staff in the wards, and it is advisable that it should be organised and carried out according to a fixed daily programme.

### **The Occupational Therapy Class.**

#### **The Teacher.**

In some countries, occupational therapy is regarded as a specialised branch of the teaching profession and, in mental hospitals, the work is under the control of a director of occupational therapy. There is, however, no reason why members of the nursing staff should not be able to gain the knowledge required for the teaching of the various handicrafts. Infinite tact, patience and unfailing good humour are needed to induce unwilling patients to work. The patient has to be encouraged even though his work is unsatisfactory. The commercial value or beauty of an article is a minor consideration so long as the patient benefits from the work. It is an axiom of occupational therapy that bad work is better than no work at all.

To use occupational therapy successfully with mental patients, the nurse must have not only experience in mental nursing and a sound knowledge of mental disorders, but also an intelligent appreciation of the principles on which the treatment is based.

#### **The Classroom.**

The classroom should be placed well away from the wards, with separate accommodation for each sex. A separate classroom has the correct atmosphere of work, and is not subject to the distractions and interruptions which may be caused by the routine ward work and the presence of troublesome patients. Patients attending the class get up in the morning with a definite objective for the day, to leave the ward and go to work in different surroundings. Further, the atmosphere of industry about the workroom gives the unoccupied patient a sense of isolation. Where everybody is busy, the idle patient does not fit in with the crowd. The instinct to behave as the majority does—the herd instinct—will sooner or later cause the patient to attempt something when proper instruction and encouragement are given.

Where sharp and dangerous tools are used, they are more easily checked and stored in a special workroom than in a ward. It is convenient to have tools placed in a suitable

cupboard where each has a place of its own. The checking can then be done rapidly and efficiently, so that the risk of patients taking dangerous weapons back to the wards is diminished. In addition to the storeroom for tools, a glass fronted showcase may be provided in which finished articles can be displayed, in order that patients may have the satisfaction of seeing the things which they themselves have made.

Proper ventilation and lighting are essential for health reasons and also for the prevention of fatigue.

### **Hours of Work.**

In general, work hours of 9.30 a.m. to 12 noon, and 2.30 p.m. to 4.30 p.m. should be taken as a maximum. The capacity for work varies with the individual patient, and, in cases where these hours of work produce excessive fatigue, the period should be reduced.

### **Rest Intervals.**

At fixed intervals during the morning and afternoon, all work should be stopped for a period of fifteen minutes. During this interval, refreshments may be served and games played ; where facilities are available, music will provide a pleasant diversion. Whatever is done during the rest interval, it is essential that all work should be completely stopped. The object of the rest interval is to prevent fatigue.

### **Fatigue.**

Fatigue may be defined as exhaustion, either physical or mental, resulting from continued exertion. The causes of fatigue are as follows :—

- Inadequate lighting and ventilation of workroom ;
- Bodily disease or debility ;
- Defective eyesight ;
- Uncomfortable working position ;
- Prolonged work without rest ;
- Monotonous and uninteresting work ;
- Mental work which requires intense concentration ;
- Heavy physical labour.



In recent years, manufacturers have found that the prevention of fatigue results in increased efficiency of the worker and a greater output of work. The modern industrial worker is therefore housed in large, well-ventilated and well-lit workshops. The hours of work are suitably regulated, and there are fixed rest intervals, with organised facilities for recreation. In the mentally disordered patient, the tendency to fatigue is frequently greater than in the normal person, and the prevention of fatigue is therefore of great importance. If fatigue is allowed to occur, the main object of occupational therapy will be defeated.

When fatigue occurs, there is a sensation of weariness and exhaustion, with a weakening of attention and interest and a diminished output of work.

### **Varieties of Occupation.**

Occupational activity in mental hospitals may be classified in two ways :—

(a) From the *psychological* point of view.

- (1) Stimulating :—Fancy sewing, raffia work, tapestry, etc.
- (2) Sedative :—Unravelling old socks, knitting, cutting wood, etc.
- (3) Active :—Games in which the patient takes part.
- (4) Passive :—Amusements in which the patient takes no active part.
- (5) Habit training :—Teaching methods which aim at improving personal habits.

(b) From a *practical* point of view.

- (1) Occupations for patients confined to bed.
- (2) Ward work, cleaning, polishing, etc.
- (3) Shop or class work, handicrafts, trades.
- (4) Outdoor work, e.g., farm and garden.
- (5) Laundry work or cookery.

There are numerous varieties of occupation suitable for use in the treatment of mental patients. In the handicrafts section, the number of forms of occupation available depends on the knowledge and teaching ability of the person in charge of the class. A wide range of crafts makes teaching very difficult, and the organisation of the class soon becomes unwieldy. It is much better to have a few easily taught occupations of sufficient variety.

It is important however to emphasise that *all* institutional activities followed by patients constitute occupational therapy. Occupations such as wardwork, farming and laundering are as important from a curative point of view as handicrafts are, and should not be neglected because they are less spectacular

The economic aspect of occupational therapy has also to be considered. It is not necessary to have expensive machinery and tools except where ready disposal of the completed articles makes their production economically profitable. If articles are produced on a large scale, they should, as a rule, be of such a nature that they can be used in the hospital. The purchase of expensive new material should be avoided as far as possible. It is desirable that the articles made should be useful as well as ornamental. It is bad occupational therapy to manufacture useless knick-knacks, as patients benefit from the realisation that they are doing useful work and contributing something to the common good.

The following are some common types of occupation in use in mental hospitals :—

*Stimulating Occupations.*

Drawing and painting.  
Cabinet-making.  
Leather work.  
Fancy sewing.  
Mat-making.  
Raffia work.  
Basketry.  
Fancy bead work.  
Painting furniture.

*Sedative Occupations.*

Loom weaving.  
Knitting and darning.  
Chair-caning.  
Simple basketry.  
Cutting rags for carpets.  
Sand-papering and plan-  
ing wood.  
Winding balls of wool.  
Unravelling socks.  
Stringing beads.

### **Selection of Occupation for Individual Cases.**

It is often impossible, at the beginning of treatment in a particular case, to prescribe exactly the type of occupation which will prove beneficial. A process of trial and error is usually the only method by which a suitable occupation for the patient can be discovered, and the success of this method of choice will depend upon the tact, perseverance and ability of the teacher.

As a preliminary to the selection of an occupation, consideration should be given to the patient's aptitude for the work, and to his mental state, physical condition and personal inclination. And it must again be emphasised that the first choice should not be regarded as final.

#### **Aptitude.**

The special aptitude of a patient may be judged by a knowledge of his previous occupation, but it is not always the wisest policy to employ a patient on the work to which he has been accustomed. It should be borne in mind that this occupation may have been monotonous or distasteful to him, but his special abilities may often be utilised in other more interesting and attractive forms of his trade. For example, a carpenter accustomed to wood tools may be employed on wood carving or cabinet-making.

The dominant idea is to arouse the patient's interest and to give him an opportunity for self-expression.

Natural abilities and aptitudes often lie dormant, and it is a part of the teacher's work to unearth such abilities and give the patient every opportunity to develop them.

#### **Type of Mental Disorder.**

Only general principles guide the choice of occupation for the various types of mental disorders. When the patient is self absorbed, indifferent and inert, a stimulating occupation should be prescribed and, if he is in a state of mental and physical hyperactivity, a sedative and stereotyped task should be chosen.



Patients who suffer from dementia praecox or states of depression and anxiety are best given work of a stimulating nature. Sedative occupations suit cases of acute mania. The epileptic, aware of his own disabilities, is often a willing worker, and it is with this class that the greatest improvement in behaviour is obtained. Psychoneurotics exhibit a very marked tendency to fatigue and soon lose interest ; their work should be light, stimulating, and frequently interrupted by rest intervals. Ward work, with its daily routine of scrubbing and polishing, is best left to demented patients who, when employed, do not so readily lose their habits of personal cleanliness.

### **Physical Condition.**

The type and quantity of work prescribed for patients who are physically ill must be modified according to the disease from which the patient suffers.

A patient with heart disease, or with tuberculosis, cannot be expected to carry out heavy physical labour which would place extra strain upon the diseased organs. In cases of this sort, very substantial improvement can be effected by the use of graduated exercises which tend to strengthen the body without unduly fatiguing the patient. The response to work should be noted, and the work gradually increased until the most beneficial results are obtained.

### **Personal Inclination.**

The kind of occupation must be selected for its therapeutic value, and the inclination of the patient for a certain type of work should not be a deciding factor. For example, a patient suffering from dementia praecox may prefer a simple, stereotyped occupation which permits of indulgence in phantasy, whereas he should be given a stimulating occupation which tends to divert his attention from day-dreaming and unreality.

## PART VI.

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# MENTAL DISEASES AND DISORDERS.

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## CHAPTER XLVIII.

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### THE CAUSES OF MENTAL DISORDER.

#### ENDOGENOUS—EXOGENOUS.

The prevalence of mental disorder and deficiency constitutes a serious social and economic problem. The number of patients in mental institutions in the Union of South Africa is almost as large as the total number of patients in general hospitals suffering from bodily diseases, and the maintenance of institutions for the mentally abnormal costs the country more than £600,000 annually. If we also take into account the expenditure incurred in connection with crime, alcoholism, prostitution, unemployment and other social problems with which mental abnormality is associated as one of the causal factors, it is evident that a knowledge of the causes of mental disorder is of the utmost importance from the aspects of public health, national finance and social welfare. The knowledge might enable us to undertake the measures necessary to eradicate some of the causes or, at any rate, to mitigate their effects and, by these means, to diminish the prevalence of this form of ill-health.

Systematic scientific investigations in this branch of the subject have been carried out only during comparatively recent years, and our knowledge is as yet inadequate to permit us to make dogmatic statements on many aspects of the question. For various reasons, the causes are often difficult to determine in individual cases. One difficulty is that the patient himself is usually incapable of giving an accurate account of his own illness, and another is the fact that the change from normal may have been so slow and gradual that

the earliest signs may have passed unnoticed. In most cases, the mental illness is the result of a combination of causes, and, in some, the cause may have been operating for years but the patient may not be seen until it has ceased to exist.

It is said that man is a product of two influences, heredity and environment, and, in fact, in the majority of cases of mental disorder, both act as causes, environmental conditions precipitating the illness in a person who is predisposed by constitution or inheritance. The resistance of an individual to external causes, such as alcohol, the toxins of infectious diseases, and other agents, is to some extent a measure of his mental stability.

The causes of mental abnormality may be classified under two heads, viz. :—

- (1) Endogenous, constitutional, or innate in the individual.
- (2) Exogenous, environmental, or outside the individual.

Another method of classification is into physiogenic or bodily, and psychogenic or mental, causes. The former would include brain disease, poisons and infections; the latter, emotional stresses and mental conflicts.

Mental disorder is often the end result of many conditions, endogenous and exogenous, which arise at different stages in the life of the individual; its foundation may be laid, even before birth, in the germinal cells from which the individual develops, with the result that he is poorly equipped to withstand the various strains and stresses of life.

### **Endogenous Causes.**

**Heredity**, or the transmission of bodily or mental qualities from parent to offspring, is the most important endogenous factor; its importance, however, has possibly been over-rated. The investigation of human heredity is a slow and difficult branch of research work, because of the number of years between generations and the length of the period which is therefore necessary in order to make observations and accumulate facts.



The body is regarded as consisting of two kinds of plasm, or tissue, viz., the germ plasm, or cells of the reproductive glands, and the body plasm, or the cells forming all the other tissues and organs of the body. The germ plasm is distinct from the body plasm and remains so from generation to generation. Damage to the cells of the body plasm, and bodily or mental characteristics acquired during the life of the individual, do not necessarily affect the germ cells and are not transmitted to subsequent generations. Recent investigations have, however, suggested that the germ plasm may sometimes be damaged by agents affecting the individual, such as poisons and the toxins of certain diseases, and that the results of the damage may be transmitted through several generations.

The laws of heredity have not yet been clearly defined. Those established by the experimental work of Mendel are, however, accepted. His researches showed that certain characteristics or particular qualities of parents do not blend to form a new quality or characteristic in the offspring but are transmitted unchanged. Further, certain characteristics of one or other parent predominate and appear regularly in the offspring, while others are suppressed and fail to appear. The former are termed **dominant** characteristics, the latter **recessive**. Mendel experimented with flowering plants. He crossed red-flowering with white-flowering plants. In the first generation he obtained not pink-flowering "children", but only red-flowering ones. The white-flowering character of the one parent had not, however, been lost in the children; it was only suppressed or latent. The colour character of the red flower was dominant, that of the white flower recessive. Under certain conditions, however, a recessive character can reappear in subsequent generations. Should it not meet with these conditions, it may ultimately become bred out and disappear. Mendel also found that crossing a tall pea with a dwarf pea yielded a first generation of all tall. The dwarf character, however, remained latent, for, when the first generation was further bred without crossing, dwarf peas reappeared in the proportion of one to three tall ones. In this case the character of tallness was dominant; that of shortness, recessive. These laws of inheritance, discovered by Mendel, have been regarded

as an explanation of the fact that mental disorder or defect in a parent may miss one generation and reappear in a grand-child.

To what extent do these laws actually apply to human beings? Observation has so far shown that Mendelian laws apply in certain respects as regards bodily conditions, but their operation in the mental sphere has not been clearly proved. Thus the colour of the eyes, deformities of the fingers, and some forms of cataract, have been shown to be transmitted in accordance with the Mendelian laws of inheritance. The transmission of mental abnormalities is not so clearly established. That heredity is of tremendous importance in the causation of mental disorder and deficiency is undoubted. Everyday experience confirms this. On the other hand, it is equally true that its importance has been overestimated. When we did not understand the cause of an attack of mental disorder in an individual, it was easy and convenient to ascribe it to heredity. This practice did much harm because it induced, in the minds of relatives and doctors alike, a pessimistic outlook, a mistaken tendency to assume "If a certain trait is hereditary, that's the end of it, there is nothing to be done." It would be much more correct to state that the offspring of sufferers from certain forms of mental disease may inherit a general **predisposition** to mental illness and that this predisposition may remain latent and may develop only under the influence of an external factor. For instance, not every drunkard develops an alcoholic psychosis. There must, as a rule, be some additional, some inherited constitutional factor present before alcohol causes mental disorder. It is this constitutional factor that is inherited.

This inherited predisposition to the development of mental and nervous disease is called the **psychopathic or neuropathic diathesis or constitution**. The transmission of this diathesis occurs much more frequently with certain forms of mental disorder than with others. In some forms, heredity is of little importance as a cause. On the other hand, patients suffering from the type of mental disorder called manic-depressive psychosis are very prone to transmit a predisposition to the



same disorder in the offspring. Huntington's chorea is one form of mental disorder in which transmission according to Mendelian laws is accepted as having been proved.

The researches of some authorities seem to afford evidence to justify the assumption that heredity is the chief, if not an essential, cause of mental abnormality. In order to estimate, however, the degree of importance to be attached to heredity, the figures regarding the family histories of the abnormal should be compared with those relating to the normal. One authority investigated the histories of 370 psychotic and an equal number of normal persons and found that, although there was evidence of a hereditary psychopathic diathesis in 76·8 per cent. of the former, there was also the same taint in 59 per cent. of the latter. Similar results were subsequently obtained by another investigator.

The transmission of disease by inheritance is most frequent among groups of people who are separated to some extent from the rest of the community, such as royalty, the aristocracy, Quakers and Jews. This circumstance is probably the result of inbreeding.

Heredity is described as **direct** when the condition is transmitted from parents to children, and as **atavistic** when it is derived from the grandparents or more remote ancestors. When the disorder is of the same clinical type as in the ancestors, it is said to be **similar** ; when otherwise, it is called **dissimilar**.

Anomalies in the secretions of the **endocrine glands** are associated with certain types of mental disorder and defect and may be regarded as an endogenous cause. An excessive quantity of thyroid secretion produces the disease called exophthalmic goitre and, in adults, insufficiency causes myxoedema ; both these conditions are accompanied by typical states of mental disturbance. In children, insufficiency of thyroid secretion interferes with physical and mental development. The internal secretions of the sex glands have a strong influence on the mental condition ; the instability, or actual mental disorder, which sometimes develops at the



periods of puberty and the climacteric, appears to be associated with changes in these glands. The secretions of other ductless glands have also an effect on the mental condition.

**Auto-intoxication**, or poisoning by substances produced within the body, is sometimes associated with states of mental disorder and may occur in certain conditions such as kidney disease and diabetes.

**Special sense deprivation**, such as the loss of sight and hearing, is another endogenous condition which, if it occurs in infancy or early childhood, may be the cause of mental retardation unless special methods of teaching are adopted.

Conditions such as age, sex, race and marital state are factors which may be classified as general endogenous causes in the etiology of mental disorder.

**Age.**—Mental disorder is infrequent in children ; in men it is most common at the prime of life when strain and responsibilities are usually greatest ; in women the periods of childbearing and the menopause are those in which mental disorder most frequently occurs. In both sexes the changes which occur at the onset of puberty, the climacteric and senility, are associated with the development of psychoses.

**Sex.**—There is little difference between the two sexes as regards the incidence of mental disorder. The forms caused by alcohol and syphilis are more common in men, and women suffer from those associated with childbearing and the climacteric.

**Race.**—The various races show peculiarities as regards the prevalence of particular forms of mental disorder. General paralysis is not common among South African natives although a fairly large proportion are infected with syphilis ; the coloured population is, however, extremely prone to suffer from this disease, which accounts for nearly half the number of deaths among the coloured males in mental hospitals. Paranoia is also a form of mental disorder which is seldom, if ever, met with in natives. Members of the Jewish race show a tendency above the average to develop schizophrenic

and manic-depressive psychoses, but the proportion of cases of alcoholic psychoses and mental deficiency is comparatively low.

**Marital State.**—Mental disorder is more common in the unmarried than in the married. This is probably to some extent due to the fact that the psychopath or person predisposed to mental disorder is less likely to marry than the normal person.

### **Exogenous Causes.**

The exogenous or environmental causes of mental disorder may be divided into two groups, the bodily or physiogenic, and the mental or psychogenic.

#### **Bodily Causes.**

The chief bodily exogenous causes are syphilis, alcohol, drugs, chemical poisons, the toxins of infectious diseases, fatigue and exhaustion, organic diseases of the brain and injuries.

**Syphilis** is the most common external cause of mental disorder and is responsible for about 10 per cent. of the male admissions to mental hospitals. Congenital syphilis may damage the structure of the brain before birth or in infancy and so prevent normal mental development, or it may remain dormant until the age of ten years or more and then cause the disease called juvenile general paralysis. Acquired syphilis is the essential cause of general paralysis, a special form of mental disorder associated with bodily signs and organic changes in the brain; it may also produce other organic brain conditions, such as meningitis, gummatous tumours and sclerosis of the cerebral arteries, which are frequently associated with mental disorder.

**Alcohol**, used in excess, is a common cause of mental disorder, but its actual and relative importance is difficult to determine because alcoholism is frequently an early symptom, and not the cause, of an attack of mental disorder and, also, because psychopathic persons tend to be addicted to drink. There are, however, certain definite forms of mental disorder

caused by alcohol, and its prolonged and excessive consumption is followed by general mental deterioration. It may also operate, as a contributory cause, in combination with other agents, such as syphilis, to produce other forms of mental disorder.

**Drugs**, such as opium and its various preparations, cocaine and, in South Africa, dagga or Indian hemp, sometimes produce acute temporary states of mental disorder, and their prolonged administration causes general mental, moral and physical deterioration.

**Chemical poisons**, such as lead, mercury, and carbon monoxide, which is present in coal gas and motor-car exhaust fumes, sometimes produce mental disorder.

**Toxins**, produced in the body as a result of bacterial infection, may cause states of delirium and other forms of mental disorder, particularly in individuals with a psychopathic diathesis. In some cases, such as septic teeth or tonsils, the infection is local, and the symptoms are caused by the toxins circulating in the blood; in others, such as influenza and septicaemia, the infection is general, and the symptoms may be produced by changes in the brain caused by the organisms as well as by the toxæmia.

**Exhaustion**, following some severe bodily disease or mental strain, may produce mental disorder, but it is seldom the sole cause, and the condition is usually due to a combination of exhaustion and toxæmia from some infectious or other disease.

**Fatigue** from overwork is alleged to be a cause of some minor forms of mental disorder, but it seldom produces a psychosis unless the work is accompanied by worry and anxiety or some emotional strain.

**Organic disease of the brain** damages or destroys its structure, interferes with its functions, and may cause disorder of the mind. There are numerous varieties of organic brain disease, and the symptoms vary according to the situation and extent of the lesions. The tissues may be damaged by



inflammatory conditions, such as meningitis and encephalitis, by the effusion of blood in cerebral haemorrhage, by tumours, or by arterio-sclerosis which interferes with the blood supply. Other diseases and conditions, such as syphilis, disseminated sclerosis, paralysis agitans and senility, may produce organic lesions in the brain accompanied by mental disorder. Pellagra, a disease showing bodily signs and mental symptoms accompanied by lesions of the central nervous system, is said to be caused by a deficiency of one of the vitamins.

**Injury to the head** may damage the structure of the brain and so cause epilepsy or mental symptoms ; it is not a common cause of mental disorder.

**An injury to any part of the body**, without any damage to the brain, may be followed by emotional symptoms and a hysterical state, the so-called traumatic neurosis.

### **Mental Causes.**

The mental or psychogenic factors in the production of states of mental disorder are of great importance and, either alone or in combination with other conditions, are responsible for a large proportion of the cases of mental ill-health. They may take the form of domestic or business worries, of mal-adjustment to community or family life, or of emotional stress, such as the fervour of religious revivals, the disgrace of imprisonment, or the shame of seduction and illegitimate pregnancy.

Repressed complexes and mental conflicts, particularly those of sexual origin, are frequently the cause of mental disorder. Some of the ways in which they may manifest themselves as symptoms are described in Chapter XLII. Some psychiatrists maintain that the cause of every psycho-neurosis is some experience that has been repressed into the unconscious part of the mind.

## CHAPTER XLIX.

### THE SYMPTOMS OF MENTAL DISORDER.

DEMENTIA — DISORDERS OF PERCEPTION — ILLUSIONS —  
HALLUCINATIONS — DISORDERS OF CONSCIOUSNESS —  
DISORDERS OF ATTENTION — DISORDERS OF MEMORY —  
DISORDERS OF ASSOCIATION OF IDEAS—DISORIENTATION—  
DISORDERS OF JUDGMENT—DELUSIONS—DISORDERS OF  
THE EMOTIONS—DISORDERS OF VOLITION AND ACTION—  
DISORDERS OF INSTINCTS—DISORDERS OF PERSONALITY.

In the following description of the symptoms of mental disorder the various mental processes will be dealt with separately and their respective anomalies described. It should be realised, however, that all the different mental processes are interdependent and connected with one another and that, in a case of mental disorder, the symptoms are not limited to one process, but that all the functions of the mind are more or less simultaneously involved.

**Dementia** is the term applied to any condition of permanent mental deterioration which occurs after the mind has developed and in which there is a weakening or loss of all the functions of the mind.

#### Disorders of Sensation.

The different abnormalities of sensation are described in Chapter XXXI. Anaesthesia and analgesia occur in some cases of hysteria and in states of confusion, stupor and advanced dementia. Hyperaesthesia is sometimes seen in acute mania and in neurasthenia, and melancholic patients are often intolerant of loud noises and bright lights. Paraesthesia may be a symptom in toxic cases, particularly those due to alcohol and cocaine.

Vision and hearing may be lost in hysteria, and hearing, taste, and smell may be impaired in states of confusion and dementia.

### **Disorders of Perception.**

Our knowledge of the outside world and of our own bodies is derived from information furnished by our senses and by perceptions, i.e., by what we feel, hear, see, etc. Any disorder of perception has an important and disintegrating effect on our thoughts and actions.

Imperception, illusion and hallucination are terms which are applied to the different disorders of perception.

#### **Imperception.**

Imperception, i.e., diminution or loss of perception, is a condition in which the person can feel, hear, see, etc., but cannot recognise objects or perceive because the sensations received do not awaken associated ideas in his mind. Imperception varies in degree. In states of mild confusion, external impressions are strange and vague; in more severe cases, such as advanced dementia, an external stimulus may cease to arouse any clear ideas, the patient does not realise the nature of his surroundings, and he may not comprehend the meaning of questions addressed to him.

Imperception occurs in states of toxaemia and confusion and in cases of organic brain disease; it is a cause of clouding of consciousness.

#### **Illusions.**

An illusion is a misinterpreted sensation or, in other words, a false perception, e.g., the mistaking of a stick for a snake or a tree for a man or the hearing of threats in ordinary sounds. Illusions are common among normal people but, in such cases, are corrected by reasoning and judgment. They are particularly apt to occur when one is in a state of emotion or anticipation. For instance, a frightened man in the dark may mistake a shadow for a burglar, or he may interpret a sound as being caused by someone attempting to break into the house, or a coiled up object in a corner of the room may seem to be a snake. The normal person corrects his false perception by a moment's reflection or, if it is not dispelled by reasoning, he proceeds to investigate it. He finds that the shadow is that



of a curtain moving in a draught, that the sound is caused by a creaking door, and that the apparent snake is really a coiled up strap.

The emotions of the mentally disordered are often unstable and exaggerated, and their reasoning and judgment are impaired ; as a result of this, their illusions are not so susceptible to correction by reasoning.

Illusions may affect any of the senses. Those of sight and hearing are common ; as a result, patients subject to such illusions are apt to mistake the identity of people around them or to misinterpret sounds and voices and attribute them to imaginary enemies. An irritable patient is inclined to believe that a gesture or movement is directed against him, and is apt to retaliate by striking out ; one who is suspicious may hear insulting or threatening references to himself in the innocent conversation of two persons nearby. Illusions may occur in most forms of mental disorder but are particularly prominent in states of delirium and intoxication.

### **Hallucinations.**

A hallucination is a perception without an object, that is, it occurs in the absence of a stimulus or sensation. For example, voices are heard when no one is speaking, snakes and spiders are seen when none are there, or electric shocks may be felt when there is nothing to produce them. In the mentally disordered, hallucinations are usually of an unpleasant nature. They are often vivid and force themselves on the attention ; they exert a strong influence over the emotions and behaviour and may provoke acts of violence.

Hallucinations are usually vague and changeable in confused states, and fixed and well defined in states of clear consciousness. They are also usually in agreement with the patient's inmost thoughts or repressed complexes and are then examples of the mental mechanism called projection. Some, however, appear to have a physical basis and are associated with organic disease of certain regions of the brain.

Hallucinations are occasionally experienced by normal individuals ; the so-called **hypnagogic hallucinations**, which occur in the semi-conscious state between waking and sleeping, are recognised by the individual as unreal because of their dream-like nature and their appearance during a stage of drowsiness.

Hallucinations are present in about half the cases in mental hospitals ; in chronic cases, they are always a sign of serious mental disorder, and they are of unfavourable import as regards the prospect of recovery.

The presence of hallucinations is detected in some cases from the patient's statements, that he hears voices or sees visions. In other cases, observation of the patient's behaviour indicates that he is hallucinated ; he may assume a listening attitude when no one is talking to him, or he may converse with imaginary people ; others may seem to be suspicious of the food and show anger or disgust when they smell it ; others plug their ears or noses with cotton wool or paper, evidently to keep out sounds or odours.

Hallucinations may affect any of the senses, but those of hearing are the most common.

**Auditory hallucinations**, or hallucinations of hearing, may consist of sounds or of voices ; they may appear to come from a distance or from nearby or from inside the patient himself. In some cases he may believe that he knows the identity of the person whose voice he hears, and may retaliate with violence. Sometimes the patient's own thoughts appear to be repeated to him before he can utter them, and this causes him to believe that his thoughts are known to others and controlled by influences outside himself.

Auditory hallucinations may be experienced at any time but, as a rule, they are heard most frequently when there is absolute silence, when the patient is unoccupied, and after he has gone to bed. They are most frequent in schizophrenia and paranoid conditions.

**Visual hallucinations**, or hallucinations of sight, are next in frequency ; they may occur as flashes of light, or as faces, figures or scenes. They are often terrifying but, in some states of ecstasy, they may be of a pleasant nature. Like auditory hallucinations, they harmonise with the thoughts and the prevailing emotional tone. The religious ecstatic sees angels around him ; the alcoholic in a state of delirium sees snakes, rats and other noxious vermin.

Visual hallucinations are most common in toxic states, but they also occur in cases of organic disease of the optic tract.

**Gustatory hallucinations**, or hallucinations of taste, and **olfactory hallucinations**, or hallucinations of smell, usually occur together and are often of an unpleasant nature. The patient may taste poison in his food or smell noxious gases in his room. In some conditions, such as oral sepsis and gastric disorders, the apparent hallucinations are really illusions and are caused by the misinterpretation of the unpleasant taste or smell arising from dyspepsia or a foul condition of the mouth. In fact, illusions of taste and smell are more common than hallucinations of these senses.

**Tactile hallucinations**, involving the cutaneous sensations of touch, pain and temperature, are fairly common. They occur in states of toxæmia and delirium. In cocaine poisoning, the patient may feel insects crawling under his skin ; in other cases, electric currents may be felt.

**Visceral hallucinations** may occur, but are difficult to distinguish from illusions caused by disease or derangement of the various organs. They give rise to beliefs that the bowels are blocked up, the bones powdered, the kidneys destroyed, etc.

**Motor hallucinations**, consisting of a feeling of movement, heaviness or lightness of the limbs, or of movements of the lips and tongue in speaking, are sometimes experienced.



An illustration of the different disorders of perception may be given by assuming that a stick is lying on a bed.

- (i) If a person sees and recognises it as a stick, his perception is normal.
- (ii) If he sees it and thinks it is a snake, he has an illusion.
- (iii) If he sees it but does not know what it is, he is suffering from imperception.
- (iv) If there is nothing on the bed and the person sees a stick, he is hallucinated.

Hallucinations may exercise a powerful influence over the emotions and conduct and, in obedience to commands received through hallucinatory voices, patients may commit grave and unprovoked assaults or may attempt to commit suicide.

### **Disorders of Consciousness.**

It is difficult to frame a satisfactory definition of consciousness, but we know by introspection what the term means. All the perceptions, thoughts, feelings, and everything of which we are aware at a particular moment, may be said to constitute consciousness, and it is through the various mental processes in consciousness that we appreciate our relations with our surroundings.

In addition to states of more or less complete unconsciousness, such as sleep and coma, consciousness may be clouded or obscured when the perceptive powers are impaired; this condition occurs in states of toxæmia and of dementia, and it causes confusion, emotional indifference and hesitation, and interferes with the process of reasoning.

The field of consciousness may be narrowed or limited to a particular group of ideas when the mind is pre-occupied with thoughts which absorb the attention, e.g., in melancholia and paranoid conditions.

The theory of the unconscious mind, dissociation of consciousness and the various mental mechanisms by which repressed complexes may manifest themselves in consciousness are described in Chapter XLII.

### Disorders of Attention.

The capacity for voluntary attention may be weakened or morbidly exaggerated, or attention may be distractible and mobile.

In schizophrenia and states of dementia, attention is dull and blunted because stimuli fail to arouse interest or because they recall no memories. In stupor and states of confusion, there may be paralysis of attention with no response whatever to stimuli.

In melancholia and paranoid states, the patient's attention may be exaggerated in certain respects because it is pre-occupied with only a few ideas associated with his problems and delusions ; other perceptions and ideas are excluded from his consciousness.

In mania, attention is mobile and unstable and is usually dominated by external impressions, a condition termed **distractibility**. The patient's attention is easily obtained, but he is unable to concentrate it on any particular object or idea for longer than a few moments ; every passing stimulus distracts him, his train of thought is diverted or side-tracked by everything he sees or hears, and his thoughts and conversation pass rapidly from one subject to another.

In some conditions, such as states of confusion and dementia, both voluntary and spontaneous attention are weakened ; in others, such as mania, voluntary attention is weakened and the spontaneous form is exaggerated.

### Disorders of Memory.

**Amnesia**, or loss of memory, may be caused either by defective fixation of impressions in the mind or by inability of the individual to retain or to recall previous impressions. The form resulting from default of fixation is described as anterograde amnesia, and that due to failure to retain or recall impressions is termed retrograde.

**Anterograde amnesia** occurs when an impression fails to arouse interest, or if it is only dimly perceived because of lack of attention. This form of amnesia is commonly seen in dreams, in states of confusion and in dementia. It affects recent events chiefly and, in dementia, it is usually progressive.

**Retrograde amnesia** from inability to retain or conserve impressions is usually a sign of serious mental disorder; it occurs in chronic alcoholism, general paralysis and in demented states.

Amnesia from inability to recall or reproduce impressions is a less serious form. It is often due to lack of attention and concentration and is associated with the anterograde type; it occurs in mania.

**Paramnesia** is the term applied to a state in which memory is distorted; in this condition, patients have memories of events which have never actually occurred. In a plausible manner they will describe, with much detail, personal experiences and incidents which have no foundation in fact. For example, a patient who is paralysed and has been confined to bed for weeks may relate that he went to the seaside and had a bathe the previous day; he may also mention that the water was unusually cold and that he met certain friends. Paramnesia is associated with general loss of memory and is most common in a form of mental disorder, usually caused by alcoholism, called Korsakow's psychosis.

Amnesia may be stationary or progressive. In the stationary form, the defect persists but does not increase; in the progressive form, the most recent and unstable impressions are those which are first affected.

Amnesia may be limited or confined to certain periods in states such as epilepsy and hysteria.

Psychoanalysis has shown that there is a tendency to repress and apparently to forget incidents of an unpleasant nature.



### Disorders of Association of Ideas.

Association of ideas may be voluntary and controlled, or it may be spontaneous and free. Voluntary association is regulated by attention and has some definite object or goal in view, such as the solving of a problem or the answer to a question. Free association is uncontrolled and has no goal idea; it causes **desultory association**, in which the attention and thoughts wander aimlessly and uncontrolled from one subject to another. This occurs in day dreams, states of clouded consciousness and mania.

In mania, the association of ideas is accelerated in addition to being free and unregulated; the patient's thoughts are not directed towards any particular object, and his attention and conversation are diverted by any chance impression or association, with the result that he is loquacious and his conversation passes rapidly in succession from one thing to another. When a connecting link between the subjects can be observed, the condition is termed **flight of ideas**, but, when no apparent connection can be detected, his conversation is described as **incoherent**. A colour may recall the idea of a certain flower, and this may lead to thoughts of a certain garden, its owners and what they said. The ideas may be linked by rhyme, e.g., the word "hat" may evoke the idea of "cat" and "rat"

When a patient replies to a question and his answers and conversation have no relation to the subject of the question addressed to him, they are described as **irrelevant**.

In **circumstantiality**, speech is burdened with unnecessary detail and is unusually rambling and lengthy though it ultimately reaches its object.

**Retardation of association** of ideas occurs in states of fatigue, depression, stupor and dementia. It is also seen in the mentally defective. In some cases of melancholia, the patient rarely speaks spontaneously and often fails to answer questions or does so only after a long delay or after repetition of the question. His actions are also retarded, and he takes an unduly long time to dress himself or to do anything. Thinking is apparently a slow and laborious process involving much effort.

**Ideas of reference** are those which arise on account of the tendency of certain individuals, such as those suffering from paranoid conditions, to attach a special significance to chance occurrences which they may observe and to imagine that these refer to themselves personally. Such a patient may imagine that a cough of a passer-by is a sign of contempt, or that a handkerchief is used to hide a smile of derision.

**Imperative ideas and obsessions** are irrational ideas and impulses which, although the individual recognises their morbid nature, obtrude themselves upon consciousness and persist in dominating his mind against his will. For example, a person may have an impulse to commit a criminal act, another may have a fear of open spaces, or a mother may be haunted with the idea of killing her child.

**Disorientation.**—The term, **orientation**, means the appreciation of one's relations as regards self, time and place. It is arrived at by associating present impressions with past representations and experiences, e.g., we recognise a hospital by its smell of drugs and disinfectants, the rows of beds, the white coats of the doctors and the uniforms of the nurses. In a state of disorientation the person may not know who he is, what day, month or year it is, and he may fail to recognise his surroundings or the identity of the people about him. Disorientation may be regarded as a defect of consciousness in which the person loses his conception of his relation to the outside world. It may be partial or complete, permanent or temporary. A sense of partial disorientation may be experienced by a normal individual in a state of impaired consciousness; for example, on waking up in a strange bedroom, one may not at first realise where one is.

Disorientation occurs in toxaemic states, in dementia and, particularly as regards time, in cases of amnesia; delusions about himself or his surroundings may also cause a patient to become disorientated. The condition is often associated with dullness, confusion, hesitation and emotional indifference.



### Disorders of Judgment.

Reasoning and judgment are the most complex products of mental activity. Judgment is preceded by perception, memory and the association of ideas, and is also strongly influenced by the emotions and instincts ; any fault or defect in these various processes may cause impairment of judgment. When a person's conception of his relation to the outside world is based on imagination or false perceptions and ideas and not on real facts, or when it is strongly influenced by emotion, he is apt to arrive at false judgments or delusions.

### Delusions.

Delusions may be classified as sane and insane. A **sane delusion** may be merely an error of judgment or a mistaken belief. A belief by an uneducated and ignorant person that the earth is flat, a faith in witchcraft among natives, or in fairies among young children, or a belief in the part played by storks in replenishing the population, may be regarded as examples of sane delusions. An **insane delusion** is a false belief which cannot be corrected by argument or experience and which cannot be accepted as being true by people of the same social class, race, education and period of life as the person who expresses it.

Delusions may consist of ideas which are wholly imaginary, or they may be based on faulty interpretations of actual experiences. Although the delusions may appear to be limited to a particular belief and to be the only symptoms present, they are, in fact, always multiple and indicate the existence of deep-seated mental disorder which affects every process of the mind.

### *Varieties of Delusions.*

**Systematised delusions** consist of a number of separate delusions each of which forms part of a connected system of false beliefs. They do not vary from day to day and they are often clearly expressed and may appear to be reasonable if the patient's original assumptions are admitted to be true. They often consist of delusions of persecution combined with delusions of grandeur ; a complete persecutory delusional



system comprises a knowledge of the nature of the persecution, the identity of the persecutors, and plans for defence. Patients with this class of delusion are particularly apt to develop ideas of reference. The false beliefs often exercise a strong influence on the patient's conduct ; he resents the persecution and may use violence and attack others in retaliation or for protection. Systematised delusions are seen in paranoid conditions and they are usually associated with hallucinations.

**Unsystematised, or incoherent, delusions** consist of a number of separate delusions, independent of one another.

A **fixed delusion** is one which persists and does not alter from time to time ; this form of delusion is usually systematised and is seen in paranoid states and in melancholia.

**Fleeting delusions** are constantly changing and usually last only a short time ; they are common in mania and in states of confusion.

**Delusions of persecution** are usually painful and are often accompanied by hallucinations. The patient may believe that he is the victim of a world wide conspiracy, that plots are being made to kill him, that he is acted on by electricity, that his food is poisoned, or that noxious gases are pumped into his room. He is usually suspicious, and he may identify his imaginary persecutors and associate them with certain societies such as the Freemasons or Jesuits. Persecutory delusions are often fixed and systematised ; they occur in paranoid conditions.

**Delusions of grandeur** are often fantastic and absurd. The patient may imagine that he is a millionaire, of super-human strength, of royal descent, a great inventor, or the Deity. Fleeting grandiose delusions are common in mania and also occur in states of dementia ; those of a fixed type are seen in paranoid conditions.

**Melancholic delusions** occur most frequently in states of depression. They are often fixed and may consist of ideas of sin, poverty and disease. Patients may accuse themselves of having committed unpardonable sins, they may imagine that

they are ruined financially, and some are hypochondriacal and convinced that they are suffering from some incurable bodily disease, such as cancer or syphilis, or that their intestines are blocked ; others imagine that they do not exist or that the world has ended. Patients with melancholic delusions are frequently apprehensive of some future calamity such as death, arrest or punishment. They are often suicidal and may refuse food.

In some cases, the demeanour and actions are in accordance with the delusions, e.g., a patient with ideas of grandeur may assume an arrogant and dictatorial manner ; in others, however, particularly in schizophrenia, the conduct is not in harmony with the delusions, e.g., a patient who imagines that he is of royal descent will offer no objection to performing menial tasks.

Delusions may also occur as manifestations of complexes in the unconscious mind and may represent the fulfilment of wishes ; they may also result from the mechanism called projection.

**Lack of insight**, a failure on the part of the patient to realise that he is mentally disordered and that his delusions are irrational, is a sign of disordered judgment. The development of insight is usually a favourable indication as regards the prospect of recovery.

### **Disorders of the Emotions.**

Emotional disturbance is often one of the earliest signs of mental disorder. The intensity of the emotional reaction may be exaggerated or diminished. The reaction is said to be exaggerated when it occurs without any apparent cause or when the emotional response is excessive in proportion to the stimulus ; it is diminished when a pleasant or an unpleasant stimulus produces an inadequate reaction or no reaction at all.

**Exaggeration of the emotional reaction** is a characteristic symptom in the manic-depressive form of mental disorder ; it also occurs in states of confusion and dementia, but in these conditions it is due to lack of control.



The emotional exaggeration may be in the form of morbid depression or of morbid elation, or it may show itself in irritability and morbid anger.

In a state of **morbid depression**, such as melancholia, every impression and every mental process is associated with a painful or unpleasant feeling, and even happy circumstances and beautiful surroundings may appear to be dull and dreary. The patient is sad, dull and self absorbed, and the condition is usually accompanied by retardation of thought and action. In some cases, the depression is associated with stupor ; in others, it is accompanied by agitation, and the patient is restless and may weep and wring his hands, or pace to and fro in his room.

If the depression becomes very acute, it may produce anxiety, a state in which a feeling of fear and the apprehension of some calamity are prominent features.

In a state of **morbid elation**, such as mania, the patient looks at the world through rose-coloured spectacles, he feels well and strong, and everything seems good to him. This general feeling of well-being is termed **euphoria**. In **exaltation** there is, in addition, an element of importance or grandeur. The term **ecstasy** is used for states of exaltation which have a religious or mystical colouring. In some states of elation, the patient experiences only a passive feeling of joy or happiness ; in others, he is exuberant, animated and restless, and often talks incessantly and incoherently.

**Diminution of the emotional reaction** is the simplest and commonest form of emotional disturbance. It shows itself in dullness, apathy, indifference and lack of natural feeling. It occurs in states of dementia and is one of the characteristic symptoms in schizophrenia.

In senile dementia and organic brain disease, the emotions are often shallow and fleeting, and the patient passes from laughter to tears and vice versa for no apparent reason.

Morbid emotional states are usually accompanied by certain bodily reactions. In passive depression, the secretions are diminished, causing indigestion and constipation, the pulse



is often slow, the blood pressure is raised and, sometimes, the amount of sugar in the blood is increased. In active depression, there is often a feeling of oppression over the heart, called *praecordial distress*, and the face may be pale or cyanosed. In states of euphoria, the blood vessels are dilated, the pulse is rapid and metabolism, i.e., the chemical changes in the body, is increased.

### **Disorders of Volition and Action.**

Disorder of the mind finds its ultimate expression in action, and the mental soundness of an individual is, in fact, judged by his conduct in a broad sense, i.e., by his demeanour, actions, and conversation. Anomalies and changes in conduct and habits are often an early indication of impending mental disorder. The person who has hitherto been cheerful, active and methodical may be observed to have become dull, listless and inefficient in his work, or, on the other hand, one who has been taciturn, quiet and unsociable may become abnormally talkative, restless and familiar.

Conduct, as we have seen, is largely instinctive in the early years of life. At its lowest level it is determined by the gratification of pleasure and the avoidance of pain ; in a more advanced stage it is regulated by the opinion of one's fellows ; and, at the highest level, it is governed by the sentiment of self respect. When mental disorder develops, conduct shows a tendency to regress. The most highly developed sentiments and acquirements are the first to disappear and behaviour tends to revert to lower levels. The restraints of the herd instinct are discarded, the more highly developed sentiments become blunted, and the patient ceases to be interested in the welfare and opinion of others ; he becomes self-centred, irritable and slovenly, and loses his power of self control. Ultimately, in extreme cases, he may sink to the purely instinctive level and live only to eat, drink and sleep.

Actions are classified as voluntary and conscious, or as involuntary and automatic, and both voluntary and involuntary activity may be disordered either separately or together. There are gradual transitions between voluntary and involuntary actions and, as a rule, when the participation of the

conscious will is diminished, automatic activity tends to be proportionately increased and becomes more prominent.

### **Voluntary Activity.**

Voluntary activity may be diminished or exaggerated.

**Diminution or decrease in voluntary activity** is seen in the condition called **aboulia**, or **inertia**, in which the individual is incapable of coming to a decision and cannot perform the simplest act without hesitation and prolonged delay. An aboulie person may take hours to dress himself, all his movements are carried out slowly and clumsily, and the exercise of excessive and often painful effort is obviously needed to enable him to accomplish anything. A more extreme degree of diminution of voluntary activity is seen in **stupor**. This term is used to denote a condition of psycho-motor inhibition in which the patient fails to respond to stimuli. It varies in degree and may affect involuntary as well as voluntary activity. A stuporous patient is inert, irresponsive and indifferent to his surroundings, and sometimes appears to be oblivious of them ; he does not react to stimuli such as pricking with a pin and he does not converse or reply to questions. In more profound degrees of stupor, the patient may show no desire for food and may pass excrement under him in his bed. In extreme cases, only metabolic activity persists ; he ceases to respond to organic stimuli and allows his mouth to become filled with saliva, his bladder distended with urine and his rectum loaded with faeces without making any attempt to relieve himself. There are different varieties of stupor. In one variety, called **anergic stupor**, the patient lies limp and flaccid and offers no resistance to manipulation ; this is seen in manic-depressive psychosis, hysteria and the hypnotic state ; in another form, called **resistive stupor**, which occurs in melancholia and schizophrenia, the patient is resistive and opposes every passive movement made ; in another variety, called **catatonic stupor**, he is abnormally responsive to suggestion and may allow his limbs to remain for long periods in any attitude in which they are placed. Stupor also occurs in epilepsy, toxic states and epidemic encephalitis ; in the last disease it is associated with muscular rigidity.



Diminution of voluntary activity occurs chiefly in melancholia and schizophrenia. In the former condition it is caused by inhibition, but, in the latter, it is the result of the co-existence of opposing motives. Voluntary activity may also be diminished in dementia owing to apathy and lack of interest.

**Exaggeration of voluntary activity, or increased psychomotor activity**, is a prominent feature in states of mania. The patient is abnormally active, but his activities are not harmonious. Ideas keep thronging into consciousness and are forthwith carried into effect. It is this tendency to translate every thought, as it comes, into action that gives rise to the so-called **pressure of activity** in the manic patient. He is never idle. One action succeeds another. He begins everything and finishes nothing. He is a "live wire", mischievous, officious and intolerant of any restraint or correction. In the ward he is continually interfering; he shifts the furniture about, grasps everything within his reach and then discards it. He monopolises the conversation and is alternately familiar and aggressive in demeanour. His general behaviour resembles that of a person under the influence of alcohol. He does not seem to experience fatigue as a result of his ceaseless activity, and he usually sleeps badly. This activity may gradually increase, and he may become noisy, violent and destructive.

### **Involuntary Activity.**

Involuntary activity may also be either diminished or exaggerated. **Diminution or paralysis of involuntary action** may occur in states of profound stupor. **Exaggeration of involuntary activity** is seen when the influence of the conscious mind is diminished; it may take the form of pathological suggestibility, stereotypy, impulsive acts and negativism.

In **pathological suggestibility**, or automatic obedience, the patient's actions are determined by external impressions. The term **catalepsy**, or **flexibilitas cerea** (waxen flexibility), is applied to a form of morbid suggestibility in which the patient allows his limbs or body to remain for long periods in any position or attitude in which they are placed although it may be strained, uncomfortable or ridiculous; another form is one in which



the patient repeats words which he hears (**echolalia**), or imitates actions which he sees (**echopraxia**). Some patients show a loss of all spontaneous activity, both voluntary and involuntary, but continue to be capable of carrying out commands.

**Stereotypy** is the term applied to a condition in which the person persists in repeating the same action, usually without any apparent reason or object. It may take the form of maintaining the same attitude, performing the same acts, or uttering the same words or phrases. In stereotypy of attitude, the patient may stand for long periods in the same fixed posture. In stereotypy of movement, he persists in monotonously repeating the same action which may take the form of making facial grimaces, performing purposeless movements, such as rubbing the palm of one hand with the fingers of the other, or walking to and fro along a fixed path. **Verbigeration** is the term applied to a condition in which the patient persists in repeating the same words or phrases, which are usually irrelevant and unintelligible.

A **simple impulse** is a purely automatic action and usually consists of a sudden purposeless act for which the person cannot give any reason; these simple impulses are common in schizophrenia, and a patient may commit an unprovoked assault, break a window pane or injure himself without any apparent reason or object.

**Impulses of passion** occur in states of irritability and anger; the act is committed without deliberation and often with little or no provocation or reason. This form of impulse is common in mania and epilepsy.

**Negativism** is the name applied to a condition in which the normal response of the individual to a stimulus is annulled and he responds in a manner opposite to the normal; a negativistic patient shows a general tendency to do the reverse of what he is asked to do. Like stereotypy, negativism may assume various forms. It may show itself in a refusal to obey orders, such as shutting the mouth when told to open it, refusal to speak (**mutism**), or active resistance when an attempt is made passively to move a limb or any part of the patient's body.

An **obsessive impulse** is one which impels the individual to carry out a certain act, e.g., to touch certain objects, to steal (kleptomania) or to set fire to things (pyromania). In cases where the act is harmless, such as an impulse to touch every post one passes, it is frequently carried out, but the individual usually resists the impulse to perform criminal acts.

**Perseveration** is a condition in which the person repeats the same action or reiterates the same words although he desires to do or say something else. A case is recorded in which a patient blew out a candle and, for the next few minutes, blew on every object presented to him. Perseveration is usually transient and differs from stereotypy; it is usually associated with organic brain disease.

Apraxia is described in the chapter dealing with diseases of the nervous system.

**Speech and writing**, which may be regarded as special forms of action or conduct, are often affected in mental disorder. Articulation is impaired in general paralysis and in some other organic diseases of the brain as a result of paralysis and inco-ordination of muscular movements, and hand-writing may become shaky and tremulous for the same reason.

The speech disorder, called aphasia, is described under diseases of the nervous system.

**Neologisms** are words which are made up or coined by the patient himself; they have a meaning for him although they may be unintelligible to the observer. A habit of using neologisms is one of the characteristic symptoms of schizophrenia. For example, a chemist suffering from the paranoid form of this disease explained that "Digitalis is derived from a tree called hihoppity, it amorrs the heart, carricates the brain, reaches the appendix, and katorrs into apponiharritty like clouds that are formed by the patoshments of air clatticating against the apponihaishens of the sky".

The so-called "plateau speech" occurs in epileptics; this speech is monotonous and without the usual inflections.

The disorders of speech termed echolalia, mutism, verbigeration and perseveration are described above.

### **Disorders of Instincts.**

The various instincts may be exaggerated, weakened or perverted in states of mental disorder.

The instinct of self preservation, a primary and fundamental instinct, is suppressed in those cases of mental disorder in which a suicidal tendency is a symptom. Every patient suffering from morbid depression is liable to commit suicide and patients may attempt to kill themselves because hallucinatory voices tell them to do so, or as the result of delusions and impulses.

The parental instinct may be weakened or lost in schizophrenia, and the patient may lose all natural affection for members of his family.

Perversion of the acquisitive instinct is shown in the tendency of demented patients to collect and hoard rubbish.

Exaggeration of the instinct of self-abasement occurs in melancholia ; the patient may assume a cringing demeanour and imagine that he is unfit to associate with his fellow men. This is also one of the reasons for the tendency of some patients to mutilate themselves.

The instinct of self assertion is exaggerated in states of exaltation such as mania, and the patient becomes aggressive and domineering.

The instinct of pugnacity is also often exaggerated in mania and in other forms of mental disorder.

The instinct of repulsion may be weakened or lost and some patients may eat disgusting substances, foul themselves, or plaster the walls of the room with filth.

The sexual instinct may be diminished or exaggerated and it may show various forms of perversion.



The herd instinct is lost or weakened in many forms of mental disorder and its disappearance is one of the characteristic symptoms of schizophrenia.

### **Disorders of Personality.**

Personality is determined by a combination of factors, inherited and acquired. Our conception of an individual's personality depends much more on his mental than on his physical constitution. In mental disorder, there is often a profound disturbance of personality, and the patient may appear to be completely changed not only to his acquaintances but sometimes to himself as well. His opinions, demeanour, habits and behaviour become altered, and occasionally he tends to revert to his former self at an earlier age.

In delusional states, there may be a transformation of personality. A person who imagines that he is a king may refuse to answer to his own name ; in other cases, however, the assumed role is not well maintained. A person may show reduplication or multiplication of personality and may appear to be an entirely different person at different times.

In mental deficiency, the individual's conception of his own personality may fail to develop ; in general paralysis and dementia, it may become disintegrated or lost.

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It must be borne in mind that normal mental activity depends on the harmonious working of the whole of the mind and that disturbance of any function interferes with the process as a whole.

Perception implies the occurrence of sensation, recognition and memory ; a person whose perception is impaired as a result of faults in these processes may be unable to reason efficiently about his surroundings or to act normally.

It does not, however, follow that, because a certain function is disordered, the mind is faulty in every respect, or that it is incapable of any rational action. A mentally disordered person may act normally in some situations but not

in others. In spite of delusions, the patient's judgment is not always erroneous on matters unrelated to his false beliefs ; he may be capable of solving some problems or transacting business efficiently even if he does imagine that he is the Deity or the victim of a conspiracy.

The symptoms of some forms of mental disorder are to a great extent due to the breaking up of the personality and mind of the individual and the independent activity of the separated parts. This causes disharmony in thought, emotion and conduct.

## CHAPTER L.

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### **THE CLASSIFICATION OF MENTAL DISORDERS.**

There is at present no sound foundation on which to build a systematic classification of mental disorders which would be universally acceptable and not open to criticism and objection in some respects. The work of various investigators during recent years has given us a better conception of the nature of mental disorder and has made it possible to frame systems of classification based on more scientific principles than in the past, but none of the various systems can be accepted as authoritative and final.

Bodily diseases are, as a rule, classified on a pathological basis, i.e., according to the morbid changes which are present in the organs and tissues and which give rise to the symptoms of the various diseases. The pathological method cannot, however, be adopted for the classification of mental disorders, since many forms show no distinctive anatomical lesions and, even in those in which such lesions are present, it is impossible to demonstrate the correlation between the bodily changes and the mental symptoms. In some cases, particularly those of a chronic type, it may be impossible to say whether the morbid changes which have occurred in the tissues are the cause or the result of the disorder.

Another method, used in the case of bodily diseases, is to classify them on an etiological basis, i.e., according to the presumed cause of the disease. This method is unsatisfactory in the case of mental disorders, as the same agent may cause different forms of mental disorder, and different factors sometimes operate in combination in producing the same form. For example, childbirth may give rise to one or other of a number of forms of mental disorder, and Korsakow's psychosis, which is usually the result of alcoholism, may also be caused by other poisons. Mental disorders may also be classified etiologically into two groups, endogenous and exogenous, the



former consisting of those due to inherited neuropathic constitution, and the latter of those caused by environmental conditions. In most cases, however, both factors operate, and it is often difficult to say which is the more important.

Attempts have been made to frame a classification on a psychological basis, but our knowledge is as yet too theoretical and speculative to enable this to be accomplished satisfactorily.

The symptomatic or clinical system was the one formerly in general use and, in the earlier classifications by this method, the various forms of mental disorder were classified according to the symptom which was most prominent at a certain stage or phase of the disorder. This system is unscientific and unsatisfactory, as some symptoms are only transitory and a patient may show numerous changes in symptoms during the course of his illness.

The system of classification devised by Kraepelin, the eminent German psychiatrist, was to a great extent based on symptoms, but it also took into account the etiology, the evolution and outcome, and the pathological aspects of the disorder. The various systems now in use are mainly modifications of Kraepelin's system.

Mental disorders may also be classified according to the age or period of life of the patient as adolescent, climacteric, or senile; or they may be divided into acute and chronic forms.

For the purposes of this text-book the following classification has been adopted :—

1. The Psychoneuroses.

- (a) Hysteria.
- (b) Anxiety states.
- (c) Psychasthenia.
- (d) Neurasthenia.

2. The Affective Psychoses.

- (a) Manic-depressive psychosis.
- (b) Involutional melancholia.

3. The Schizophrenic Psychoses.
4. The Paranoiac Psychoses.
  - (a) Paraphrenia.
  - (b) Paranoia.
5. Epileptic Psychoses.
6. Toxic Psychoses.
  - (i) Exogenous :
    - (a) Alcoholic psychoses.
    - (b) Psychoses caused by drugs.
  - (ii) Endogenous :
    - (a) Infection psychoses.
    - (b) Exhaustion psychoses.
    - (c) Psychoses caused by disorders of metabolism (Disorders of the ductless glands ; pellagra ; uraemia, etc.)
7. Psychoses associated with Syphilitic Disease of the Brain
  - (a) Dementia paralytica
  - (b) Interstitial cerebral syphilis.
8. Psychoses associated with Organic Diseases and Injuries of the Brain.
  - (a) Senile psychoses.
  - (b) Arterio-sclerotic psychoses.
  - (c) Encephalitis.
  - (d) Huntington's chorea
  - (e) Cerebral tumour, etc.
  - (f) Traumatic psychoses.
9. Constitutional Psychopathic States.
10. Mental Defect.

## CHAPTER LI.

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### THE PSYCHONEUROSES.

HYSTERIA—TRAUMATIC HYSTERIA—ANXIETY STATES—  
PSYCHASTHENIA—NEURASTHENIA.

The term **psychoneurosis** is applied to certain morbid mental conditions which are believed to have a psychological origin and which show no organic lesion to account for their symptoms. This definition would also include most of the **psychoses**, or definite mental disorders, and psychoneuroses may be regarded as minor forms of mental disorder; it may, in fact, sometimes be difficult to say whether a case is psychotic or psychoneurotic.

The chief distinguishing features between the two conditions may be summarised as follows :—

A psychosis changes the whole personality; in a psychoneurosis, the personality is only partly affected and the individual may appear to be unchanged in this respect. A psychotic lives partly or wholly in a world of his own imagination and acts accordingly; a psychoneurotic lives in the world of reality, and his surroundings have the same significance for him as for others. A psychoneurotic often shows insight and realises that his mental condition is abnormal. A legal distinction is that the mental condition of the psychoneurotic does not, as a rule, justify his certification as mentally disordered in terms of the Mental Disorders Act.

The different forms of psychoneuroses are classified as hysteria, anxiety states, psychasthenia and neurasthenia.

The term **neurosis** is used by some authorities to denote the forms in which bodily causes and symptoms are prominent features of the condition.



### Hysteria.

Hysteria is a morbid mental condition characterised by instability of the emotions and lack of self-control, states of disturbed consciousness and loss of memory, and by numerous bodily symptoms, motor, sensory and visceral.

Hysteria is usually seen in individuals who have been emotionally self-centred and jealous and who have shown a morbid craving for sympathy and a tendency to depend on others. It is more common in the female sex. Many cases have a psychopathic family history. The condition is believed by some authorities to be the result of repressed complexes, and the symptoms are regarded as representing, in a disguised and symbolic form, unfulfilled wishes and repressed unpleasant experiences. Hysteria may simulate various bodily diseases, and hysterical patients have sometimes undergone operations and other forms of treatment for conditions which had no real existence.

*Symptoms.*—The symptoms may be divided into mental and physical. The general mental condition is exhibited in the patient's temperament and behaviour; the mood is fluctuating, and the patient is usually selfish, capricious, unreliable and inclined to be mendacious; she shows lack of self-control and is apt to behave impulsively; she is usually abnormally responsive to suggestion and may develop new symptoms as a result. The special mental symptoms consist chiefly of amnesias, fugues, somnambulisms, trances, states of delirium and hallucinations. The amnesias are often limited to certain periods associated with emotional experiences. Fugues and somnambulisms are examples of dissociation; during a fugue, the person may leave his home, travel, perform complicated acts over a long period, and retain no recollection of what he has done. Some patients pass into trances in which they appear to be asleep and oblivious of their surroundings. States of ecstasy with emotional exaltation also occur. Hysterical patients occasionally become excited, confused and delirious, and hallucinations, usually visual, sometimes occur.

The bodily symptoms may be motor and sensory ; they often simulate the signs of organic nervous diseases, but they are usually contradictory and changeable and they do not correspond with anatomical and physiological facts such as the distribution of the nerve supply to the part affected.

The motor symptoms consist of various forms of paralysis, tics, tremors, spasms, unnatural gaits and fits. The paralysis may be spastic or flaccid and may vary in extent and degree from time to time ; it may affect any of the voluntary muscles, but never involves only one muscle. The paralysis may be paraplegic, hemiplegic or monoplegic. Contractures sometimes occur in long standing cases of paralysis, and the gait may be affected. A hysterical person may show no signs of paralysis while in bed, and yet be incapable of standing and walking. Aphonia, or loss of voice, and mutism are common symptoms.

The typical hysterical fit is often caused by some emotional situation and preceded by laughing or weeping ; it usually occurs in the presence of other people. It may be difficult sometimes to distinguish a hysterical from an epileptic fit ; the main differences are shown in the following table.

| <i>Hysterical Fit.</i>   | <i>Epileptic Fit.</i>   |
|--|---|
| Onset gradual and follows some emotional disturbance                                       | Onset sudden and without any apparent cause                         |
| Patient falls but avoids injuring herself  | Patient falls and often injures herself                             |
| Patient may cry and scream throughout duration of fit.                                     | Cry occurs only at onset  |
| Movements are violent and purposive ; patient resists, and assumes attitudes, often erotic | Movements are in form of tonic spasm followed by clonic convulsions |
| Never occurs during sleep  | Occurs at any time, often during sleep                              |

*Hysterical Fit.*

Pupils react to light and accommodation  
 Corneal reflex present  
 Sphincters controlled  
  
 Plantar reflex normal (flexor)  
 Consciousness wholly or partly retained  
 Often terminates in laughing or crying  
 Tongue not bitten; no conjugate deviation of eyes

*Epileptic Fit.*

Pupils inactive  
 Corneal reflex absent  
 Sphincters relaxed and patient may pass urine and faeces involuntarily  
 Plantar reflex often extensor  
 Consciousness lost  
 Terminates in sleep  
 Tongue may be bitten; eyes turned to one side in tonic stage

The sensory symptoms consist of varying degrees of anaesthesia, hyperaesthesia or paraesthesia, which may occur in patches or involve large areas. The patient may complain of various pains in different situations. Vision and other special senses may be impaired or lost. A person with hysterical blindness, however, usually avoids obstacles and does not fall.

Visceral symptoms, such as retention of urine and persistent vomiting or complete loss of appetite, may occur. Vasomotor disorders are common.

*Treatment.*—The nurse should bear in mind that, although the symptoms of the hysterical patient may appear to be simulated, they are not consciously and voluntarily assumed, and the patient cannot control them.

The patient should be dealt with firmly and should not receive an undue amount of attention and sympathy. She should be isolated during periods of acute mental disturbance or when a fit occurs. Occupational therapy, persuasion and other forms of psycho therapy are useful. Hysterical patients are abnormally suggestible and suggestion is often effective in removing symptoms.



**Traumatic Hysteria.**

This is a morbid mental condition which sometimes follows an injury to any part of the body, and not necessarily to the head. The symptoms may develop immediately after the accident, or not until some weeks have elapsed. A patient with traumatic hysteria may complain of severe pains, or he may be paralysed or disabled, usually in the injured part, and remain so for long periods. No structural changes due to injury or disease which might account for the symptoms can be discovered, however, and the condition is regarded as having a mental origin. Traumatic hysteria is more frequent in those cases of injury in which there is a question of obtaining monetary compensation, and the symptoms often clear up when this has been settled.

**Anxiety States.**

An anxiety state is characterised by a constant feeling of anxiety and the fear of some grave personal calamity such as incurable disease, insanity or impending death. The patient is depressed, irritable and sleeps badly; he is incapable of mental concentration and is often unable to carry out his duties efficiently. In addition, he is subject to attacks in which he has distressing symptoms of bodily disease. These are numerous and varied and may affect any system; for example, he may suffer from palpitation, dyspnoea or sensations of suffocation, profuse sweating, diarrhoea, nausea or vomiting, tremors, or fits of dizziness. These symptoms have a mental cause and no organic disease of the organs affected can be discovered. The attacks are often brought on by excitement or worry on occasions when the individual has to perform some responsible or unusual duty.

Even with normal persons, unaccustomed situations, such as having to make a speech in public or undergo an oral examination, may be so disconcerting that they cause palpitation, dryness of the mouth, or other symptoms of acute anxiety

The symptoms are the result of disturbance of the functions of the involuntary nervous system, and they are regarded as manifestations of emotions associated with repressed complexes. According to some authorities the condition has a sexual origin.

*Treatment.*—This is mainly psychotherapeutic. A careful history should be taken and the patient thoroughly examined to ascertain the existence of any organic condition which might account for the symptoms. If no signs of disease are discovered, the patient is reassured and informed that there is no physical basis for his condition. The cause of his symptoms and the real reasons for his anxiety are explained to him, and he is encouraged to adopt a more rational attitude. Occupational therapy, exercise and similar measures are beneficial.

### **Psychasthenia.**

Psychasthenia, or the obsessive-compulsive neurosis, is characterised by the preoccupation of the person's mind, largely to the exclusion of other interests, with irrepressible morbid thoughts, fears, doubts or impulses. The person realises that these thoughts, feelings and impulses are morbid and unreasonable, and he is distressed by their dominance over his mind.

Some psychasthenics are obsessed with philosophic speculations, and their thoughts are constantly occupied with problems such as why God made the world, the origin of man, the existence of a deity, etc.

In another form, the individual is subject to fears of various kinds. Some are afraid of open spaces such as the veld or an empty street (agoraphobia); others fear enclosed spaces such as rooms in houses, compartments in railway coaches, subways, etc. (claustrophobia); many people have an irrational fear of heights; others are morbidly afraid of infection or dirt, of thunder and lightning, of certain animals such as cats, of blushing when in company, or having an action of the bowels while at a social function. There are innumerable fears of all kinds, and many of them have been distinguished by special terms; they are often accompanied by states of anxiety.

Obsessions may also take the form of doubts ; the person's mind may be preoccupied with the thought that he has omitted to perform some act or duty, such as stamping or signing a letter, fastening a window, or locking a safe, and he continues to be worried and unhappy until he has verified his action by inspecting the object of his perturbation ; sometimes he may not be reassured by one inspection, and a man who doubts if he has locked the safe may feel compelled to return to examine it several times before he is fully satisfied.

Obsessive impulses impel the individual to perform certain acts which are opposed to his judgment and will. These acts are usually purposeless and they are apparently symbolic of some repressed complex. They may take the form of an impulse to steal (kleptomania), to set fire to things (pyromania), to utter obscene words, to touch certain objects such as all the electrical light standards in the street, or to perform other acts. It has been recorded that persons with an obsession to read every advertisement or to count every object of a particular kind on a certain route have felt compelled to return to the place whence they started and to repeat the task because of a misgiving that they might have missed one. Persons with obsessive impulses may resist for some time the urge to carry out the act, but they usually have a feeling of relief after they have given way and performed it ; this lasts until they are again seized with a repetition of the impulse. If the impulse is to commit an act which is criminal or dangerous, it is usually not obeyed.

Psychasthenic individuals are usually in a state of doubt and fear, and they are constantly worried by ideas that they have done the wrong thing or failed to do the right one.

Normal people may suffer from obsessions in a mild form, particularly when they are run down and worried ; their minds may be obsessed by certain ideas, by the repetition of a certain tune in their ears, by doubts as to whether they have locked all the doors at night, left the tap running or enclosed a letter in the right envelope. An impulse to avoid all the joints in the paving when walking, or to touch objects with a



stick, may be frequently observed. The case is recorded of a clergyman who was constantly worried by the fear he had dropped a pin in the communion wine.

*Treatment.*—The patient's general health and condition may be poor, and rest and extra nourishment are often needed. Occupational therapy, healthy exercise and recreation, and psychotherapeutic treatment may help the patient and restore his confidence in himself.

### Neurasthenia.

The term neurasthenia was formerly widely used and loosely applied to a number of different mental disorders, many of which belonged to the anxiety or obsessional groups. The occurrence of neurasthenia in a pure and uncomplicated form is rather uncommon, and it is sometimes combined with anxiety states or other psychoneuroses. The term is now used to designate a form of neurosis in which mental and physical fatigue is the predominant symptom.

Neurasthenia is said to be caused by overwork, but excessive work, unless it is accompanied by worry or anxiety, is unlikely to be the sole cause of a prolonged morbid mental state. Excessive devotion to duty is usually regarded as praiseworthy by the patient and his friends and, as a result, both the frequency of this factor as a cause and the prevalence of this form of psychoneurosis are likely to be overestimated. In some cases, the condition may be the result of mental conflicts and prolonged emotional strain. Inherited predisposition is also an etiological factor, but it is apparently less prominent than in the other forms of psychoneurosis. Freudian psychologists regard this condition as being caused by excessive sexual indulgence, particularly masturbation.

*Symptoms.*—The most prominent and characteristic symptom of neurasthenia is fatigue; the neurasthenic quickly becomes tired, he is unable to concentrate his attention or to accomplish his usual work, and a simple task necessitates an excessive degree of effort for its performance. The fatigue is both mental and physical and is not relieved by rest. It is

apt to occur more particularly with the performance of un congenial activities, e.g., playing tennis for two or three hours may be less likely to cause fatigue than weeding the garden for half an hour.

In addition to fatigue, there are other symptoms, mental and physical, of a varied nature.

The patient is usually depressed, irritable and hypochondriacal, and he is morbidly sensitive to annoyances and disappointments ; because of his poor attention, his memory fails, particularly for recent events, e.g., in reading a book he may forget the meaning of what he has read before he gets to the bottom of the page.

The bodily symptoms are numerous and varied. The patient usually has a poor appetite, loses weight and sleeps badly ; he often complains of various aches and pains, headache, strange sensations of pressure on his head, noises in his ears, loss of strength and, sometimes, loss of sexual vigour. He may suffer from indigestion, constipation, diarrhoea, frequent micturition, or palpitation.

*Treatment.*—Psychotherapeutic treatment should be given. Rest, followed by graduated exercises and occupational therapy, is usually beneficial. If the patient is in poor condition, he should be given extra nourishment and tonics, and medicinal treatment may be needed to relieve the bodily symptoms.

## CHAPTER LII.

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### THE AFFECTIVE PSYCHOSES.

#### MANIC-DEPRESSIVE PSYCHOSIS—INVOLUTIONAL MELANCHOLIA.

The affective psychoses are those forms in which disorder of mood, consisting either of elation or depression, and exaggeration of the emotional reactions are the essential and characteristic symptoms. The condition is apt to develop in individuals whose emotional reactions have always tended to be excessive ; their moods have often been unstable and shown a tendency to oscillate between the gay and the sad without apparent reason ; in other cases, the individual's temperament has always been either abnormally happy, gay and vivacious or the reverse. A psychopathic family history is frequently present in this group, and the inheritance is often of the similar type.

The mental disorders, termed the manic-depressive psychosis and involutional melancholia, are included in the affective group. They are common forms and constitute about fifteen per cent. of the admissions to mental institutions.

#### **Manic-depressive Psychosis.**

This is a constitutional form of mental disorder characterised by the recurrence of certain states which show groups of symptoms associated with exaggeration of the emotions ; these states are known as the manic, depressed and mixed phases of the psychosis. Each phase may recur, or it may alternate with the others ; this is illustrated by the following diagrams :—

The first attack occurs usually between the ages of fifteen and forty-five years. The attacks often develop without any apparent exciting cause, but they sometimes follow some bodily or mental stress, such as childbirth ; or they may be associated with critical periods, such as the onset of menstruation and the climacteric. The disorder is characterised by a



tendency to recover completely from the separate attacks, but their recurrence sooner or later is to be anticipated. As a rule, the attacks do not lead to general mental deterioration or dementia.

The disorder is not accompanied by any specific organic changes in the brain.

### Manic Phase.

The cardinal symptoms of this phase are euphoria, acceleration of the association of ideas and increased psycho-motor activity. There are different degrees and forms of mania, which are designated by the terms hypomania, mania, acute delirious mania and chronic mania.

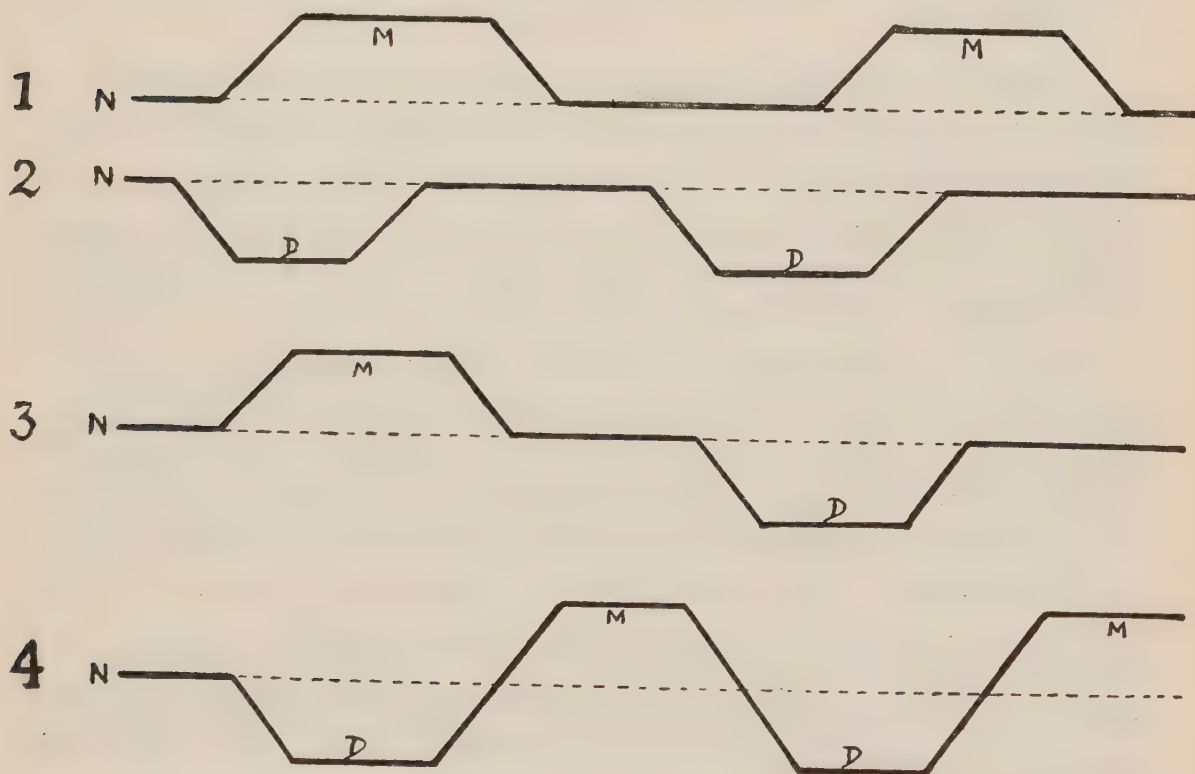


FIG. 60.—DIAGRAM OF TYPES OF MANIC-DEPRESSIVE PSYCHOSIS.

1, Recurrent Type (mania) ; 2, Recurrent Type (depression) ; 3, Alternating Type ; 4, Circular Type ;

N—normal ; M—mania ; D—depression.

**Hypomania** is a mild degree of mania ; the patient is euphoric and shows increased psycho-motor activity. He usually wears an animated expression and assumes a gay demeanour ; he is inclined to dress in a showy style and to

decorate himself with large buttonholes of brightly-coloured flowers and with various ornaments ; he is affable, often unduly familiar and sometimes self-assertive and rude ; he volunteers the information that he is exceptionally well and happy and feels capable of accomplishing the most difficult tasks. He is restless, interfering and inclined to take up fresh activities one after another without completing any of them. His actions are often impulsive. He is talkative and his conversation shows flight of ideas, the flow of ideas being rapid and abundant, one following another with only superficial connections. His attention is impaired, but his consciousness and orientation remain intact as a rule. He is inclined to be extravagant in money matters and to display erotic tendencies ; these manifestations often appear at an early stage before the condition is recognised.

**Mania, or acute mania,** often develops suddenly after a period of depression and is characterised by euphoria and the rapid development of increased psycho-motor activity. The patient cannot keep still ; he is constantly talking and on the move. His demeanour is usually exalted and domineering. His actions are determined by his mood and the circumstances of the moment, and his behaviour is usually impulsive and often violent. He shows a lack of discretion and a disregard for social conventions ; he discusses most intimate family affairs with strangers and has no hesitation in greeting in a familiar manner important persons with whom he is unacquainted. His conversation is incoherent and may pass in quick succession from the holy to the profane, or from the sublime to the ridiculous. He is apt to imagine that everyone will be glad to have his advice and assistance, and he is usually officious and aggressive.

His attention is mobile and distractible and, as a result his perceptions may be impaired ; consciousness and orientation are sometimes slightly clouded. Judgment is disordered and, on account of his rapid and superficial association of ideas and his exaggerated opinion of his own capabilities, he may develop grandiose delusions. These are fleeting and tend to alter according to successive external impressions. The

manic patient may assert that he has superhuman strength or enormous wealth or that he is of exalted rank or a renowned inventor, but, while expressing such beliefs, he often appears to lack conviction of the truth of his statements and to regard them jocularly.

Transient illusions or hallucinations may occasionally occur, but they are rarely a prominent or permanent symptom.

The disorder usually reaches its height in a few days and continues with slight fluctuations for weeks or months. Improvement is gradual, and relapses usually occur before recovery is finally established.

Manic patients sleep badly ; the pulse rate is increased and the blood pressure diminished.

**Acute delirious mania** is characterised by intense psychomotor activity, clouding of consciousness, hallucinations and an exaggerated but mobile emotional state. The patient is sleepless, loses weight and quickly becomes exhausted. Some patients of this type are really cases of exhaustion or infection psychosis.

**Chronic mania** is the term applied to certain cases showing manic symptoms which do not recover but continue over a period of years. This form is seen most frequently in persons whose first attack did not occur until the age of forty years or later.

*Treatment.*—A quiet and regular life, avoidance of excitement and worry, and abstinence from alcohol may help to prevent attacks in persons subject to this disorder. It is important that the condition should be recognised in its early stages and the patient placed under control before his extravagance and erotic tendencies have damaged his reputation and his financial and social interests.

Manic patients should be kept under close observation and should obtain as much rest and quiet as possible. Recent and acute cases should be kept in bed, in the open air if possible. In subacute cases, an outlet for the patient's excess of



energy may be found in some form of occupation. In mild cases, and during convalescence, it may be advisable to allow the patient a limited degree of freedom. Manic patients are often restless, noisy and violent, and their behaviour and tendency to interfere tend to provoke frequent quarrels. The nurse will find ample opportunity for the exercise of her tact and powers of persuasion in dealing with such patients. It is sometimes possible to take advantage of the distractibility of their attention to divert their activities into other channels and so avoid disturbances and fights in the ward.

The continuous warm bath is one of the most effective methods of treating excitement and sleeplessness. Restraint by mechanical means should be used only as a last resort and limited to cases showing pronounced dangerous tendencies. The management of violence is described elsewhere.

Hypnotic and sedative drugs may be prescribed by the doctor to allay excitement or to procure sleep, and their effects should be noted by the nurse.

### **Depressed Phase.**

The characteristic symptoms of the depressed phase, or, as it is sometimes termed, melancholia, are morbid mental depression, retardation of the association of ideas and decreased psychomotor activity. Simple, acute and stuporous forms are described.

In **simple depression**, the onset is usually gradual, but the patient is often in a state of profound depression before a doctor is consulted. The emotional state is obvious from the sad facial expression, the downcast demeanour, the slow gait and the subdued voice. If the patient is not too inhibited, he may state that he is miserable, that he has lost interest in everything, that he is worthless and a burden to his relatives and would be better out of the way. Inhibition is shown in his retardation and lack of initiative; he finds difficulty in starting work and cannot accomplish anything.

Perception may sometimes be slightly impaired, but consciousness and orientation are usually well preserved. The patient's attention is preoccupied with his own morbid feelings and thoughts. Psycho-motor activity is diminished, and all his actions are slow and performed only with the expenditure of excessive effort. Conversation is retarded, and the patient may speak only in whispers or in monosyllables. Judgment is less impaired than in the manic phase, and patients often show some insight. The duration of the depression is usually from a few months to over a year; improvement is gradual and interrupted by relapses.

In **acute depression**, the symptoms of the simple form are accentuated, and melancholic delusions usually develop as a result of the depression. They consist chiefly of delusions of sin and unworthiness, of poverty and ruin, of ill-health and of persecution. One patient may rake up trivial mistakes of his past life and make out that they were heinous crimes for which burning in hell is the inevitable and only just punishment; another may believe that he is ruined financially and has no means of support; some imagine that they have cancer, syphilis or some incurable disease, that their intestines are blocked up, that they have no brain or other viscera, that their bones have been converted into glass or jelly, or even that they themselves have no existence at all; others develop delusions of persecution and believe that people are talking about them in opprobrious terms, that the police are watching them, or that their creditors are pressing them and wish to put them in prison. These delusions are often fixed and systematised.

**Stuporous depression** develops when inhibition becomes very pronounced. The patient may not move or speak and may seem to be apathetic and oblivious of his surroundings or overwhelmed with fear. In some cases he is limp and flaccid and, in others, rigid and resistive. In profound stupor, urine and faeces may be retained or the patient may pass excrement under him. Some patients refuse to eat and have to be fed by tube. The stupor usually disappears gradually, and the patient ultimately recovers from the attack.



The depressive phase is usually accompanied by symptoms of bodily disorder. The general health is often poor; the patient loses weight and his temperature is subnormal. The secretions, such as sweat and the digestive juices, are diminished and, as a result, he often suffers from indigestion and constipation. His urine is scanty and often contains excess of urates or phosphates and, sometimes, sugar. The pulse is rapid, the blood pressure is increased, and the circulation is sluggish, causing cyanosis and coldness of the extremities; some patients complain of a dull pain over the region of the heart.

*Treatment.*—The patient should be kept in bed during the early stages, even in mild cases. He is thus able to obtain mental and physical rest, which is often badly needed; in addition, confinement to bed is the most effective way to keep him under satisfactory supervision. The greatest danger is suicide. Every depressed patient should be regarded as suicidal, and constant and strict supervision is therefore essential. The special precautions which must be taken are described in Chapter XLV. The depression and the urge to commit suicide are often most intense in the early morning. Close observation should be maintained during convalescence, as relapses often occur and, also, because the patient sometimes pretends to be well in order to obtain his discharge or a relaxation of supervision which would give him an opportunity to carry out his suicidal intention. It is important that he should obtain sufficient nourishment; in some cases feeding by spoon or tube may be necessary. He should be weighed every week. Sleeplessness may be treated by warm baths, hot drinks or massage. Indigestion or constipation may require treatment by special diet or by medicines.

Drugs may be prescribed to relieve the emotional stress or to procure sleep.

### **Mixed Phases.**

Mania and melancholia are two phases of the same mental disorder. Some patients have only manic and others only melancholic attacks, but most have both at some time or other, though one phase may be mild and may pass unnoticed. In the mixed phase, there is a simultaneous combination of the



symptoms of mania and melancholia. With the exception of the form termed agitated depression, the different varieties of the mixed phase most frequently occur shortly before recovery, or during the period of transition from mania to depression or vice versa. The occurrence of mixed phases is explained by the assumption that all the symptoms of one phase do not disappear, or change over to those of the opposite phase, at the same time and, hence, a state occurs in which the patient shows symptoms both of mania and of melancholia. The symptoms of the mixed phase vary and several varieties have been described.

In **agitated depression**, the patient is acutely depressed, but psycho-motor activity is increased. It seems as if the intensity of the depression overcomes the inhibition and compels him to express his feelings in his conduct. He is restless and anxious ; he may weep, groan, pull out his hair, pick at his skin and constantly walk to and fro in his room, loudly lamenting his state of misery and his dreadful fate. Precordial distress is a common accompaniment of the agitation. These patients are often extremely suicidal and must be closely watched.

Agitated depression often develops as an exacerbation of the depressive phase. It does not occur so frequently in the transition stages as the other varieties do.

In **unproductive mania**, the patient is elated, but he is also dull and retarded and shows poverty of ideas.

**Manic stupor** is a condition in which the patient is dull and unresponsive but is, at the same time, exalted, laughs without any apparent reason and is apt to perform sudden, impulsive acts.

**Irascible mania** and **depressive excitement** are terms which are used to denote other combinations of symptoms, or varieties of the mixed phase.

### **Involucional Melancholia.**

The application of the term involucional melancholia is restricted to a group of cases of morbid depression occurring at the involutionary period, i.e., from about forty to fifty years in women and ten years later in men. The condition is regarded by some authorities as a phase of the manic-depressive psychosis but, although some cases occurring at this period should be placed in that group, there are others which show certain distinctive features. These are, mainly, the longer duration of the disorder, the poorer prospects of recovery, and the facts that the attack is sometimes the only one in the patient's life, and that it often appears to be precipitated by some external cause.

Involucional melancholia occurs in simple, agitated, stuporous and delusional forms, and its general symptoms resemble those of the depressed phase of the manic-depressive psychosis. It may continue for five to ten years, and only about one-third of the cases ultimately recover completely. Many cases are complicated by arterio-sclerosis or senile changes which militate against recovery and tend to cause dementia.

*Treatment* is the same as for the depressed forms of the manic-depressive psychosis.

## CHAPTER LIII.

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### THE SCHIZOPHRENIC PSYCHOSES.

#### SIMPLE, HEBEPHRENIC, CATATONIC, AND PARANOID FORMS.

**Schizophrenia** is the term applied to a large group of psychoses most of which develop insidiously during the period of adolescence and proceed gradually to a distinctive form of dementia. The word "schizophrenia" means splitting of the mind, and it signifies the state of disharmony or dissociation between the different functions of the mind which is such a prominent feature in this disorder.

**Dementia praecox**, or precocious dementia, is another term for this psychosis.

Schizophrenia is one of the commonest forms of mental disorder; over twenty per cent. of the admissions and more than fifty per cent. of those remaining in institutions are cases of schizophrenia. The high proportion among those remaining is accounted for by the facts that the disorder is a chronic one with only a small proportion of recoveries and that it does not shorten life to any marked extent.

Two-thirds of the cases occur between the ages of fifteen and thirty years. A family history of psychopathic disorder is found in more than half the cases. Many, who eventually develop schizophrenia, have been unsociable, morbidly sensitive and self conscious, the so-called "shut-in" type, or they have shown other peculiarities from childhood. The onset of the disorder may be precipitated by various strains and stresses such as childbirth, injury, acute illnesses, grief and shock.

Some authorities consider that the cause of schizophrenia is psychological and that the condition is the result of the individual's inability to adjust himself to his surroundings. The period of adolescence is a difficult one, and the shy, self-conscious and "shut-in" youth may be overwhelmed by the duties and responsibilities of adult life and



unconsciously retire from the world of reality to an imaginary one of his own creation in order to escape from his problems. Others believe that the disorder is caused by bodily anomalies, such as endocrine disorder, auto-intoxication or toxaemia from infections.

Organic changes of the brain have been described in cases of schizophrenia, but they are not specifically associated with this form of mental disorder.

There are four **varieties or forms** of schizophrenia. These are classified according to the prominence of certain symptoms and known as the simple, hebephrenic, catatonic and paranoid forms. The distinction is, however, only relative, and transitions between the different varieties sometimes occur.

*Symptoms.*—Some symptoms are common to all four varieties of the disorder, and others are specially characteristic of one particular form.

The chief *common symptoms* are as follows: The onset of the disorder is usually insidious, and the first indication observed often consists of a gradual change of temperament. This is shown in the patient's indifference and indolence, his self absorption and lack of initiative; he is often unable to concentrate on his work, and his habits become careless and slovenly; he is sometimes suspicious and irritable and, in the early stages, subject to occasional attacks of excitement and depression. The symptoms gradually become more pronounced, but all the mental functions are not affected uniformly. Indifference of mood with diminution of the emotional reactions is a fundamental and, usually, the most characteristic symptom; it is shown in the patient's apathy, the absence of either gladness or sadness, his lack of interest and ambition, and loss of natural affection. There is often disharmony between the emotional state and the patient's beliefs. Behaviour shows a reduction of voluntary activity, but automatic reactions are usually prominent and appear in the form of stereotypy, negativism and impulsiveness. **Mannerisms**, which consist of habits, peculiar to the individual, of repeating the same movement, facial grimace or other action, are usually seen. These

are not so monotonously repeated as stereotyped actions and they are more characteristic of the individual. Normal people often show mannerisms of various kinds. Attention is impaired because of lack of interest ; memory is only slightly affected in the early stages but gradually becomes more defective ; consciousness and orientation remain intact for a long time ; thought is sluggish and desultory, and speech is often incoherent and irrelevant. Judgment shows progressive impairment ; the patient has no insight as a rule and is incapable of adapting himself to new situations. The disorder proceeds gradually towards a state of mental deterioration which varies in degree.

A schizophrenic tends to give an impression that there is a barrier, or something unnatural or strange, which prevents one getting into touch with him. With a manic-depressive patient, on the other hand, one feels that the morbid condition is really an exaggeration of states which are normal and that, to a large extent, the difference is only one of degree ; this enables one to understand the symptoms and to enter into the feelings and thoughts of the patient more easily.

During the early stages of this disorder, schizophrenics are often in poor bodily health and badly nourished, and they frequently suffer from headache and sleeplessness. Cyanosis, oedema or other signs of circulatory disorder may develop, particularly in the catatonic form. Epileptiform seizures occur in a few cases. There is a tendency for patients suffering from schizophrenia to contract tuberculosis.

The characteristic *symptoms of the different forms* are as follows :—

**Simple Form.**—The onset is almost always insidious. About the time of puberty the patient begins to show indifference and lack of interest accompanied by progressive mental deterioration. The condition may develop in a youth who has previously been bright and intelligent ; he gradually becomes dull, apathetic and lazy, loses interest in both his work and play and ceases to acquire new ideas. Conduct is



often strange and aimless, and he shows various mannerisms. Mild cases of this kind are sometimes not recognised, and the parents may regard the condition as merely one of disappointing lack of ambition. Hallucinations and delusions do not occur in this form except occasionally and transiently. The mental deterioration continues to increase gradually, and the prospects as regards recovery are bad.

**Hebephrenic Form.**—There is a gradual change in disposition, and the patient becomes seclusive and lazy, lounges about and does not occupy himself. Some are restless, leave their work and wander away from home; others may be depressed and hypochondriacal in the early stages. After a while, hallucinations and illusions are observed, and the patient begins to express delusions. His conduct becomes more silly and affected; he makes meaningless grimaces and purposeless movements, laughs for no apparent reason, and sometimes performs impulsive or aimless acts. Various manifestations of stereotypy occur; the patient often assumes fixed attitudes, repeats the same actions or reiterates the same words or phrases. Speech is sometimes extremely incoherent, and neologisms may be used. Symptoms which are regarded as specially characteristic of the catatonic or paranoid forms may sometimes be observed. The general mental condition gradually deteriorates, the hallucinations and delusions tend to become more vague and less prominent and, ultimately, the majority of hebeprenics become deeply demented. A small proportion, about ten per cent. recover.

**Catatonic Form.**—This is characterised particularly by states of stupor and excitement which recur and may alternate with each other. An acute onset is more common than in the other forms, and the disorder sometimes begins with an attack of stupor or excitement. Early symptoms consist of change of disposition, inaptitude for work and general lack of interest and initiative; these may be followed by attacks of depression; hallucinations and delusions develop, and the patient presents the common early symptoms of schizophrenia. After the initial stages, the distinctive catatonic features appear in the form either of stupor or of excitement.



In **catatonic stupor** the patient is dull, torpid and unresponsive. Automatic reactions are usually exaggerated. Some patients are negativistic ; they may refuse to speak or eat, or allow saliva to accumulate in their mouths, and urine in their bladders. Some are morbidly suggestible and show *flexibilitas cerea*, *echopraxia* and *echolalia*. Others show stereotypy of attitude, movement and speech, and persist in repeating the same purposeless actions, meaningless grimaces and unintelligible remarks. A characteristic feature of this form of stupor is the tendency of the patient to perform sudden impulsive acts of violence without apparent reason or provocation. While in a state of stupor, the patient may appear to be unconscious of his surroundings, but he is not really so, and he may afterwards relate events which occurred while he was stuporous. Stupor may occur in repeated attacks, each followed by an increase of mental deterioration.

**Catatonic excitement** is sometimes preceded by stupor. The patient is restless, noisy and violent but the excitement differs from that of mania. He does not show the elation and infectious gaiety of the manic patient, whose actions have usually a well defined purpose for the moment, although they are rapidly and frequently diverted from one object to another. In catatonia, emotional feeling is absent, and the patient's activities are purposeless and stereotyped and not directed towards any particular object. Sudden impulsive acts are common, e.g., he may, without warning, jump out of bed, shout, break the windows and talk incoherently. During catatonic excitement, consciousness may become clouded but orientation is not lost as a rule.

In catatonia, bodily symptoms, such as oedema and cyanosis, are common, and hysterical or epileptiform attacks sometimes occur.

In most cases, the attacks of excitement and stupor continue to recur, each attack being followed by an increase in the mental deterioration. During the intervals between the attacks, the patient shows the common symptoms of schizophrenia, often with hallucinations and delusions.

Remissions are more frequent and the prospects of recovery are better in the catatonic than in the other forms of schizophrenia, but the majority of patients ultimately become demented.

**Paranoid Form.**—This is characterised by the prominence of hallucinations and delusions which may be either disconnected or systematised. The onset is gradual and the early symptoms are similar to those of the other forms. Later, numerous delusions develop, and become a prominent feature of the condition.

In the type with disconnected delusions, the false beliefs are vague and disconnected and, at first, usually of a persecutory type. The patient is apt to imagine that his thoughts are read and controlled by others. Hallucinations are prominent ; he hears jeering voices, smells foul vapours, sees strange visions and faces. Later, expansive delusions usually develop often of an impossible and fantastic nature. Consciousness, memory and orientation may not be impaired until the late stages of the disorder. The patient is often restless and quarrelsome. The mood and behaviour do not, as a rule, conform with the delusions, and the patient does not act up to his beliefs.

In the type with systematised delusions, the so-called paranoid dementia, the false beliefs are connected with one another more closely and are usually not so fantastic as in the other form. At the onset, the patient has often a feeling of depression accompanied by melancholic ideas. Later, definite and more or less systematised delusions of persecution appear ; he imagines that he is watched, jeered at, possessed by spirits, or controlled by other persons or by societies, such as the Freemasons or Jesuits. Hallucinations are also experienced ; he hears abusive voices, tastes poison in his food, smells noxious gases in the room, or feels itching or other sensations in his skin. Delusions of grandeur develop later. Consciousness and orientation remain clear until the later stages.



In paranoid schizophrenia, the patient usually shows mannerisms, affectation, indifference, and the other symptoms common to all forms of this psychosis, the disorder progresses slowly, but the patient usually shows some degree of deterioration after a few years; as the deterioration increases, the delusions and hallucinations become less prominent.

There is little or no prospect of recovery in the paranoid form.

**Atypical and mixed forms** of schizophrenia frequently occur. The different forms are really variants of the same psychosis; transitory states of excitement or stupor may occur in hebephrenia, and paranoid delusions are sometimes expressed by catatonic patients.

*Treatment.*—The outlook in schizophrenia is unfavourable but some patients do recover, and appropriate treatment before the symptoms have become definitely confirmed may avert further development of the disorder. A tendency to day-dreaming and seclusiveness in childhood should be discouraged, and bad habits and eccentricities corrected.

Apathy and lack of interest are particularly characteristic of this psychosis, and the patient tends gradually to become more slovenly and lazy; he is unconcerned about his own state and neglectful of the usual social amenities. It is important that he should be encouraged and assisted to maintain a normal standard of habits and conduct for as long as possible, in order to retard the process of regression. He should be trained to wash himself, brush his hair, clean his teeth and attend to his toilet on getting up in the morning, to bath regularly, to behave in a proper manner at table and to observe the normal social conventions with regard to himself and his relations with others.

His time should be as fully occupied as possible and every effort must be made to interest him in some form of work, either in the ward, occupational therapy class, workshops or grounds. Special aptitudes should be encouraged and developed. The patient should also be made to take part in the various forms of recreation, such as games, dances and entertainments.



The establishment of a so-called beauty parlour, and the provision of pretty frocks for entertainments and dances, may play an important part in the treatment of female cases and help to maintain their interest and self respect and to delay the progress of deterioration. The beauty parlour should be provided with an adequate supply of powder, cosmetics and the usual accessories for making up ; it should also be equipped with the various articles needed for hairdressing.

The general health of schizophrenic patients is often poor, and ample nourishment should be given, particularly in the early stages, as they have a tendency to contract tuberculosis. During the acute phases of the disorder, it may be necessary to confine the patient to bed. Stuporous cases must be kept clean, regular action of the bowels maintained and precautions taken to prevent bed-sores ; spoon-feeding or tube-feeding is sometimes needed.

Excitement may be treated by the continuous warm bath.

Recently, injections of insulin have been used in the treatment of this psychosis, and benefit is reported to have resulted in a number of cases.

Although it may not be possible to obtain recovery in the majority of cases of schizophrenia, the energetic and persistent application of the above measures will delay the progress of deterioration and tend to make the patient more useful and less troublesome. It is probable that the profound degree of deterioration in so many of these patients in institutions might have been prevented, if appropriate and sufficiently energetic treatment had been employed in the early stages.

## CHAPTER LIV.

### THE PARANOIAC PSYCHOSES.

#### PARAPHRENIA—PARANOIA.

The paranoiac psychoses, paraphrenia and paranoia, are chronic progressive forms of mental disorder characterised by the development of fixed, systematised delusions.

#### **Paraphrenia.**

Paraphrenia is the term used to designate a form of psychosis in which systematised delusions and hallucinations are the prominent features. In many respects it resembles the paranoid variety of schizophrenia and it may be regarded as occupying a position intermediate between that psychosis and true paranoia. Paraphrenia, however, is distinguished from paranoid schizophrenia by certain differences, chiefly as regards the age of onset, the time of appearance of the hallucinations, the development of mental deterioration and the general symptoms of the disorder. The average age of onset is later, usually in the fifth decade; the hallucinations do not appear until comparatively late in the disorder; the patient's personality is better preserved; mental deterioration does not usually supervene for many years and, in some cases, not at all; when deterioration does occur it is not of such a pronounced degree as in schizophrenia. The paraphrenic's delusions are not so fantastic, and his emotional reactions and behaviour are in conformity with his delusions; in addition, he does not exhibit the characteristic symptoms of schizophrenia, such as the affected demeanour and the silly and stereotyped behaviour.

*Symptoms.*—Paraphrenia develops usually between the ages of forty and fifty years. In the initial, or prodromal, stage, an individual, who has usually been of a suspicious temperament, often oppressed by a sense of his own inferiority, becomes gradually more distrustful. He tends to misinterpret

ordinary occurrences and finds sinister hidden meanings in innocent trivial incidents, e.g., a wink or a cough is a sign to direct attention to him, he sees slights when none are intended and is apt to imagine that offensive paragraphs in the newspaper may refer to him. During this stage some patients become despondent ; others are aggressive and violent. After a prolonged prodromal stage, often lasting five or six years, hallucinations and systematised delusions appear. The hallucinations may be vague at first but, later, they are clearer and more vivid. The delusions become gradually more definite and more completely systematised ; they usually consist of delusions of persecution at this stage, and the patient may believe that he is the victim of an organised conspiracy and adopt violent measures in retaliation, or to protect himself from his imaginary enemies. Neologisms may sometimes be observed. The disorder progresses gradually and, after a while, the delusions of persecution are usually replaced by ideas of grandeur ; the patient develops an exaggerated opinion of his own importance and may imagine that he is the rightful owner of an exalted title or immense wealth. Ultimately, after many years, some degree of mental deterioration usually supervenes.

*Treatment.*—Paraphrenic patients should be encouraged to occupy themselves as much as possible and to take part in the various forms of recreation. They retain their intellectual powers for a long time and are often capable of useful work if congenial occupation can be found for them. They are sometimes irritable and quarrelsome, and tact and resource may be needed to prevent violent behaviour. It is inadvisable for the nurse to discuss the patient's delusions with him.

### **Paranoia.**

The use of the term paranoia, or Kraepelin's paranoia, is restricted to a form of mental disorder of a chronic, progressive type in which fixed, systematised delusions of persecution and grandeur are the prominent symptoms but in which there are no hallucinations. Another feature of the disorder is the fact that it never terminates in dementia.



Paranoia is a rare psychosis ; it is more frequent among men than among women and is a form which is very seldom, if ever, seen in the native races of South Africa. It develops in the type of individual who has always been conceited and suspicious and inclined to imagine that he has been unfairly treated or wronged in some way because he did not obtain the recognition to which he believed he was entitled. This tendency may have been apparent from childhood, but the actual disorder does not become evident until the age of about forty years as a rule. The early symptoms resemble those of paraphrenia. The patient is inclined to develop delusions of reference ; he imagines that innocent, inoffensive remarks have a sinister personal application and are a reflection on his character ; he misinterprets ordinary occurrences and is suspicious if the conversation ceases when he enters a room. In the early stages the patient often dissimulates and may keep his delusions to himself for a long time because he realises that others will not believe him. Later, his delusions become more clearly defined and his enemies are identified ; the hostile acts may be ascribed to individuals or to societies such as the Freemasons or Jesuits. He ceases to dissimulate and becomes resentful and aggressive. At this stage he is often dangerous and violent. The delusions increase in number and variety and become more confirmed. After this stage delusions of grandeur appear and the patient may imagine that he is an important personage of exalted rank or extraordinary ability. He often imagines that others are jealous of him, and he is usually less dangerous after the grandiose ideas have appeared.

A paranoiac's statements may appear to be reasonable and logical if his original premises or assumptions are accepted as true, and it may sometimes be difficult to determine whether his beliefs are true or false without further evidence. Paranoiacs often express their beliefs and opinions in a convincing manner ; they may even succeed in imposing them on groups of individuals, and they may be accepted as prophets or as founders of new religious or political parties.

*Treatment.*—The correction of abnormal tendencies in childhood may help to prevent the development of the disorder. When it is fully developed, treatment is unsatisfactory and little can be done. It is futile and harmful to argue with a paranoiac about his delusions. The patient should be occupied in congenial work as much as possible. On account of their violent, or even homicidal, tendencies, many of them have to be kept under close supervision, and special precautions may be necessary if they have identified particular persons as their enemies.

## CHAPTER LV.

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### EPILEPTIC PSYCHOSES.

Epileptic psychoses are forms of mental disorder which are associated with idiopathic epilepsy. They are characterised by permanent anomalies of personality and temperament, usually accompanied by mental deterioration, and by the recurrence of temporary states of mental disorder.

Epilepsy is not, however, always accompanied by mental deterioration and many epileptics go through life without any signs of dementia.

The nature and symptoms of epilepsy as a form of nervous disorder, and a description of the two forms of epileptic fits, will be found in Chapter XXXI.

The cause of epilepsy is obscure. Alcoholic excess, injury to the head and acute illnesses may provoke the development of the disorder in those who are predisposed. Three-quarters of the cases occur before the age of twenty years and one-third during infancy. If the disorder appears before the age of seven, it usually interferes with the development of the mind and causes mental defect.

*Symptoms.*—The mental symptoms may be divided into those which are constant and persist during the periods between the fits, and those which are temporary and appear during the transient states of mental disorder. The latter are usually associated with the seizures and occur at irregular intervals.

The *permanent symptoms* consist chiefly of those which are characteristic of the so-called epileptic constitution, and of those which are the result of mental deterioration.

The **epileptic constitution** or epileptic character, shows features which are typical of the disorder and which may have been apparent even before the onset of the fits. It manifests itself chiefly in peculiarities of personality and temperament. Most epileptics are remarkably egocentric, i.e., their interest



is focussed on themselves. They are generally selfish, suspicious, querulous and inclined to be moody and hypochondriacal. Many of them constantly complain of the state of their health and they are apt to make unfounded accusations of ill-treatment. A large proportion are morbidly religious and sanctimonious ; they are in the habit of making profuse professions of their piety but, as a rule, their practices are not consistent with their precepts. Another feature peculiar to this form of mental disorder is that epileptics consort with other epileptics ; they sometimes conspire with one another and incite insubordination. Generally they are troublesome, unreliable and not amenable to discipline. Their conversation is often rambling, circumstantial and loaded with unnecessary detail ; the subject of it is usually either themselves or their religious beliefs and experiences.

The majority of patients show symptoms of **epileptic deterioration**, varying in degree ; in about half the cases, it is slight and chiefly affects the memory, and, in a few, there is no evidence of any deterioration. Loss of memory is a prominent symptom ; it affects both recent and remote events and an amnesia, limited to the periods occupied by fits or transient mental states, is one of the most characteristic features of the disorder. Perception is dull and retarded ; the patient is often confused ; he assimilates new impressions poorly and shows poverty of ideas. His reasoning and judgment show progressive impairment. Epileptics are often stubborn and resistive and apt to be impulsively violent.

The *temporary symptoms* appear during the **recurrent transient states** of mental disorder. These states assume different forms and vary in duration. They generally occur before or after the fits, but they sometimes develop spontaneously and independently and appear to replace the seizures. The terms epileptic equivalent, masked epilepsy, and psychic epilepsy, are used to denote the condition in which transient states occur apart from fits or in place of them.

The transient states may take the form of *aurae*, attacks of ill-humour, confusion, delirium, stupor, or the state termed epileptic automatism.

The different varieties of **aurae**, or states which sometimes immediately precede the fits, are described in Chapter XXXI.

The majority of epileptics are subject to recurrent **periods of ill-humour** during which they are more irritable and quarrelsome than usual ; this condition often occurs after the fit but sometimes precedes it and, in these cases, the ill-humour often subsides after the patient has recovered from the fit. This condition may last for a few hours or for several days.

The **states of confusion** usually occur after fits but sometimes before or independently. Perception is impaired and consciousness is clouded. The confusion varies in degree and may be profound in delirium or stupor.

**Stupor** may follow a fit and continue for only a few minutes, or for hours or longer ; in this state the patient may be immobile and cataleptic, or he may execute aimless actions. The stupor is accompanied by confusion, and the patient retains no recollection of his experience when he emerges from it.

A **state of delirium** may develop after a fit ; the patient is acutely excited, confused and restless and he usually suffers from vivid hallucinations. He may be extremely violent and commit assaults. He has little or no memory of his behaviour after he has recovered from the attack.

**Epileptic automatism** may occur after a fit or independently. It is a form of dissociation or double consciousness in which a part of the mind detached from normal consciousness takes control and directs the person's actions. It may last for only a few minutes or persist for hours, days or even longer periods. In a state of automatism the patient may perform actions, apparently consciously and deliberately, without being aware of their meaning or implications. For example, he may undress in the street or pass urine in public without appearing to realise that his conduct is unconventional. In a certain case a clerk in a shop, who was not aware that he suffered from epilepsy, innocently incurred his master's displeasure by closing the store and putting up the shutters in the middle of the day. He did not remember what he had done after he had recovered and was astonished and aggrieved when he was



summarily dismissed. The same individual, on another occasion, after a minor epileptic fit, proceeded to fill his pockets with potatoes from a sack standing near him and was unable to account for being in possession of them when he regained his normal state of consciousness. In another case a woman who had a fit when she was cutting a loaf of bread seized her child's arm after the fit and attempted to amputate it. In some cases the automatic conduct is complicated and extends over a long period; cases are recorded of individuals, who were at their homes at the onset of the attack, finding themselves in another town or country when they recovered, without any knowledge of where they were or how they had got there. These states of automatism, occurring in epileptics, are sometimes called **epileptic fugues**.

An epileptic may suffer from any of the various transient states, but, as a rule, the attacks recur in the same form in individual cases.

A characteristic feature of all these transient epileptic states is that the patient, after he has recovered from the attack, has no memory, or only a confused recollection, of his conduct and experiences during the period occupied by the attack.

In some cases epileptics commit criminal acts during these states.

*Treatment.*—The treatment of epilepsy is described in Chapter XXXI, and the management of a patient during a fit is dealt with in the Preliminary Handbook.

A special dietary, called ketogenic diet, consisting of a low proportion of carbohydrates and proteins and an excess of fats, has proved effective in the treatment of some cases of epilepsy in children.

In accordance with the theory that some forms of epilepsy are caused by the accumulation of fluid in the brain, the disorder has been treated by reducing the quantity of liquid consumed and the administration of Epsom salts. This treatment is difficult to carry out in the case of mentally disordered patients.



## CHAPTER LVI.

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### **TOXIC PSYCHOSES.**

#### ALCOHOLIC PSYCHOSES—PSYCHOSES CAUSED BY DRUGS.

Toxic, or intoxication, psychoses are those forms of mental disorder which are caused by toxins or poisonous substances which circulate in the blood and affect the brain. These toxins, which are of a varied nature, may be introduced into the body from outside (exogenous toxins), or they may be formed inside the body in certain diseases (endogenous toxins).

The symptoms of the various forms of mental disorder caused by toxins are similar in many respects. Acute intoxication may produce a state of delirium with confusion, restlessness and hallucinations; and prolonged poisoning tends to cause general mental deterioration. Although there is this general resemblance in the action of the various toxins on the mental functions, each produces its own distinctive and characteristic symptoms.

#### **PSYCHOSES CAUSED BY EXOGENOUS TOXINS.**

These are caused by poisons which enter the body from outside. Alcohol and various drugs and chemicals, such as morphia, dagga, carbon monoxide and lead, may produce symptoms of mental disorder if they are introduced into the body in sufficient amounts.

#### **Alcoholic Psychoses.**

The alcoholic psychoses are caused by the excessive use of alcohol as a beverage. It is estimated that from five to ten per cent. of the admissions to mental hospitals can be attributed, directly or indirectly, to this agent. Alcoholism is, however, sometimes an early symptom of some other form of mental disorder, such as mania or general paralysis; also, persons with an unstable nervous system or an inherited psychopathic constitution are more prone than normal people

to develop a psychosis from alcohol. It is therefore difficult to estimate its relative importance as a causal factor. Sometimes a habit of drinking to excess has its origin in the unconscious desire of the individual to escape from reality and to submerge his anxieties and mental conflicts by the production of an artificial state of euphoria.

Alcoholic psychoses are more common in men than in women and are most frequent among persons who are associated with the drink trade.

The psychoses caused by alcohol may be the result of acute intoxication or they may appear in various forms in persons who are chronically addicted to alcohol.

### **Acute Alcoholic Intoxication.**

Acute alcoholic intoxication may occur in two forms, the physiological and the pathological.

**Physiological intoxication**, inebriation, or ordinary drunkenness, may occur in a normal person as a result of taking an excessive quantity of alcohol but, to some extent, its development depends on the nature and concentration of the alcohol taken and the mental stability of the individual as well as on the quantity consumed. Some persons are abnormally susceptible to the effects of alcohol either constitutionally or as a result of disease or injury to the brain. In the first stage of ordinary intoxication, the individual shows increased psycho-motor activity and is restless and loquacious ; he may show flight of ideas and behave impulsively ; emotionally he may be either hilarious or sad, affable or morose, sentimental or pugnacious. This state of excitement is followed by a stage in which there is clouding of consciousness and muscular inco-ordination ; in more severe cases there may be coma and paralysis.

**Pathological intoxication** is an exaggerated and abnormal form of acute alcoholism. It may occur, in a person with an inherited or acquired susceptibility, as a result of drinking only a small quantity of alcohol ; even one or two glasses of beer

may be sufficient to cause the condition in some individuals. Pathological intoxication may take the form of maniacal excitement, coma or convulsions. In the maniacal form, the person may be intensely excited and extremely violent; consciousness is clouded and, sometimes, fleeting hallucinations and delusions occur; he may assault people without any provocation or even commit homicide. He usually recovers in a day or two after a prolonged sleep and retains no recollection of his conduct during the state of excitement. In comatose drunkenness, excitement does not occur or is only a transient phase; the individual becomes comatose and may remain so for several hours; the coma terminates in sleep followed by recovery. In some cases death occurs from collapse. In the convulsive form, the symptoms resemble those of an epileptic seizure.

*Treatment.*—The stomach may be washed out and a purgative should be given. Maniacal cases should be isolated; in cases of collapse, cardiac stimulants or artificial respiration may be necessary.

### **Psychoses with Chronic Alcoholism.**

Chronic alcoholism may produce a state of permanent mental deterioration, or it may be the cause of various forms of mental disorder, some temporary and others permanent.

**Alcoholic Dementia.**—Alcoholic dementia is characterised by gradual intellectual and moral deterioration and is associated with chronic degenerative changes in the tissues of the central nervous system.

*Symptoms.*—The patient shows progressive mental enfeeblement. His capacity for work becomes diminished and his susceptibility to fatigue is increased. A prominent symptom is failure of memory; his recollection of the past becomes confused and he ceases to acquire new ideas. His judgment is impaired and he has no insight into his condition; he is inclined to be suspicious and to blame others for his own mistakes and to imagine that he is badly treated and persecuted. Emotionally he is irritable and subject to outbursts of unreasonable anger; he loses his self respect and



sense of responsibility and becomes indifferent to the loss of his reputation or his impending financial ruin. He repeatedly breaks his promise to give up drink. A habit of being jocular or facetious on unsuitable occasions, the so-called "drunkard's humour", is often a prominent feature. Early treatment may arrest the advance of the condition, but, unless the individual ceases to take alcohol, the deterioration slowly progresses to a state of complete dementia.

Chronic alcoholics suffer from insomnia and nightmares. Physically, they often show tremors, particularly of the fingers, and their movements may be inco-ordinate. Symptoms of peripheral neuritis may develop. Gastro-intestinal disorders occur and morning vomiting is a common symptom. Arteriosclerosis and chronic nephritis may complicate the condition.

*Treatment.*—Total abstinence from alcohol is essential; on account of the patient's untrustworthiness this can seldom be attained except in an institution. Rest, hydrotherapy and massage are often beneficial, and psycho-therapeutic treatment is sometimes effective. Medicines may be prescribed for the sleeplessness and digestive disturbances.

**Delirium Tremens.**—This form of alcoholic psychosis is characterised by the sudden development of numerous hallucinations, chiefly of sight, delusions which are usually terrifying and changeable, clouding of consciousness and restlessness.

Delirium tremens occurs in chronic and heavy drinkers and sometimes follows an alcoholic bout; it is seldom seen in a person who only occasionally takes alcohol in excess. It often appears after several days abstinence from alcohol and has consequently been regarded as the result of sudden deprivation; the evidence in support of this theory is, however, inadequate. The disorder is often precipitated by some mental or physical stress such as a bereavement, an accident, or an acute illness.

*Symptoms.*—After a period during which the manifestations of chronic alcoholism, such as sleeplessness, irritability, headache and tremors, are accentuated, the symptoms of

delirium tremens appear suddenly, often in one night. The patient becomes restless, suspicious and frightened; and hallucinations and illusions appear early. Later, consciousness becomes clouded, and the patient is disorientated for place and time but not as regards himself.

He is excited, noisy and talkative, and often appears to be repelling, or fleeing from, imaginary assailants. The hallucinations are usually vivid, painful and changeable; they are chiefly visual, but touch and other senses may also be affected. The patient sees terrifying objects, such as snakes, spiders and rats, sometimes unnaturally coloured. He may feel insects crawling over his skin or hear threatening voices. Illusions also occur, and he misinterprets sounds and other sensations. His attention is impaired and is usually distractible, but it can sometimes be gained for a moment during which the patient will answer a question relevantly. Memory for recent events is defective and, after recovery, there is usually an amnesia for events during the acute stage of the illness. Emotionally he is, as a rule, anxious and apprehensive, but may be happy and jovial. The so-called "occupation delirium", in which the patient imagines that he is in familiar surroundings and engaged in his usual occupation, is a common condition. For example, a shepherd may believe that he is driving a flock of sheep, a conductor that he is leading an orchestra, or a cab driver that he is driving his car.

The common bodily signs are tremors of the hands and face, inco-ordination of movement, and sensory disorders such as areas of hyperaesthesia and paraesthesia. There is often a slight degree of fever, and the urine may contain albumin. In severe cases, collapse may develop, and convulsions or coma sometimes occur. Pneumonia is a common complication.

The disorder continues for a few days, usually four or five, and the symptoms become less acute, or may disappear entirely, after the patient has had a good sleep. In some cases, he may recover in a day or two and, in others, he may remain delirious for two or three weeks. Relapses occur occasionally, or there may be a transition into another form



of mental disorder. In a certain proportion, about twelve per cent., the attack ends fatally as a result of collapse or some complication, such as pneumonia.

*Treatment.*—The patient should be kept in bed in a quiet and darkened room. Mechanical restraint must never be used unless the circumstances render it impossible to dispense with it. It is important that the patient should obtain sufficient nourishment. This should be given in small quantities at frequent intervals, and spoon or tube-feeding must be used if he refuses to eat. The action of the bowels should be maintained and, in most cases, the administration of aperients is necessary. The excitement is treated by continuous warm baths and sedative drugs. Alcohol may be withdrawn either suddenly or by the gradual or tapering method; the latter is the one usually employed, it is less distressing to the patient and not so trying for the nurse. If collapse occurs, cardiac stimulants will be needed and, in these cases, alcohol is often the most effective one.

**Acute Alcoholic Hallucinosiis.**—This psychosis is characterised by the sudden appearance of systematised delusions of persecution and hallucinations without any disturbance of consciousness. It occurs in habitual drunkards, usually middle aged, and is brought on by conditions similar to those which cause delirium tremens.

*Symptoms.*—Premonitory signs, consisting of an accentuation of the symptoms of chronic alcoholism, may often be observed. The patient becomes uneasy and suspicious, and hallucinations and delusions of persecution soon appear; he imagines that he is being watched and may be afraid to leave his home, or he may believe that people are following him with the object of killing him. The delusions increase in number and become systematised, and they are reinforced by the addition of delusions of reference. The hallucinations are chiefly auditory, but other senses may also be affected; the patient hears voices threatening him or accusing him of crimes or perverse sexual practices. His consciousness and orientation are not affected, and he converses lucidly. Emotionally he is usually anxious and apprehensive.



In acute cases, the symptoms continue for two or three weeks and then disappear suddenly ; in sub-acute cases, they may persist for a month or longer, and the patient recovers gradually ; in a few cases the disorder becomes chronic.

*Treatment.*—These patients are often dangerous as they may attack their imaginary enemies or commit suicide in desperation. Hospital treatment is necessary as a rule, and the patient should be kept under close supervision.

**Chronic Alcoholic Hallucinosis.**—The distinctive features of this form are chronic hallucinations and delusions of persecution. The disorder runs a long course and leads to a moderate degree of dementia. It sometimes follows delirium tremens or acute hallucinosis ; the patient remains anxious and suspicious and continues to hear imaginary voices and to express delusions which are often of a fantastic or a sexual nature. The condition resembles that of the paranoid form of schizophrenia, and is regarded by some authorities as a variety of that disorder which is brought on by alcoholism.

**Alcoholic Paranoia.**—Alcoholic paranoia is characterised by the development of a delusional system, occasionally accompanied by hallucinations. The delusions are commonly of jealousy and marital infidelity. Ideas of reference are frequent, and the patient makes unwarranted deductions from ordinary chance occurrences. Consciousness remains clear, and behaviour may be little affected in some cases ; in others, the patient may become dangerous and homicidal. The condition continues to progress unless the patient abstains from alcohol.

The conversation of some of these patients may appear to be rational, and they may express their delusions in such a plausible and convincing manner that it is sometimes difficult to determine whether the beliefs are true or false. The reasons given by the patient in support of his statements are, however, usually fantastic, unreasonable and inadequate ; in addition, the general condition of the patient, the signs of chronic alcoholism and the information obtained from other sources may provide sufficient grounds to come to the conclusion that the patient is suffering from mental disorder.

**Alcoholic Pseudo-paresis.**—This psychosis, which occasionally develops in chronic alcoholism, is characterised by bodily and mental symptoms which closely resemble those of the disease called general paralysis. The onset of the condition may be rapid; the patient becomes confused, delusions of a grandiose nature and hallucinations appear, and symptoms of general mental deterioration soon develop. The bodily signs consist chiefly of tremors, muscular incoordination, inequality and other anomalies of the pupils, and impairment of articulation; epileptiform or paralytic attacks sometimes occur.

The disorder progresses towards a state of complete dementia unless abstinence from alcohol is enforced; the withdrawal of alcohol arrests the progress of the condition, but some degree of residual dementia persists.

**Korsakow's Psychosis.**—Korsakow's psychosis, or polyneuritic psychosis, is a form of mental disorder which is characterised by disturbances of memory and by physical signs of multiple neuritis. The condition is caused, as a rule, by alcohol, but it may be a result or complication of phthisis, influenza, or other disease, and it may also follow poisoning by carbon monoxide, lead and other substances. It is a form of alcoholic psychosis which is relatively common in women.

The disorder is associated with degeneration and destruction of the tissues of the central nervous system and peripheral nerves.

*Symptoms.*—The onset is usually sudden and the initial symptoms may resemble those of delirium tremens. The patient is confused, agitated and hallucinated at first, and, after these acute symptoms have subsided, the disorientation remains. In some cases, the disorder may develop gradually. Amnesia is the most conspicuous mental symptom of this psychosis; it is of the anterograde variety and due to defective fixation of sense impressions. The patient cannot remember events which occurred only a few seconds previously; he forgets that he has just had a meal or seen a visitor. As a result of the amnesia, he is disorientated and loses his conception of time, place and his own identity. In addition to



the loss of memory, the patient shows the condition known as paramnesia or confabulation ; he believes that he remembers events which have not actually occurred and he fabricates and relates these pseudo-reminiscences with an air of absolute certainty. For example, a patient who has been alone in his room all day may state that he had certain visitors, whom he names, to see him at a particular hour and give a detailed account of the subjects of their conversation. He has no insight, but, otherwise, his judgment may be little impaired as regards matters immediately presented to him.

The bodily signs are those of polyneuritis ; the reflexes are absent as a rule, there are areas of paraesthesia, and the patient complains of tenderness when the calf muscles are compressed ; the muscles waste, movements are inco-ordinate, and there is paralysis, particularly of the lower limbs, which may cause foot-drop, a condition in which the foot hangs down and cannot be flexed on the leg.

If alcohol is withdrawn, the acute symptoms gradually disappear ; after six or twelve months, the patient may have recovered to a large extent, but some degree of deterioration nearly always persists and is shown in loss of memory and energy and impairment of judgment. If he resumes his drinking habits, the acute symptoms soon recur. In some cases, death results from wasting and exhaustion or from some intercurrent disease.

*Treatment.*—The early treatment is similar to that for delirium tremens. Afterwards, the patient should be kept at rest in bed. Massage, passive movements and electrical treatment may be needed to restore the muscles after the acute symptoms have subsided. Precautions should be taken to prevent the development of bed-sores.

### **Dipsomania.**

Dipsomania is a condition in which an irresistible craving for alcohol occurs at intervals. The craving leads to a bout of drinking which usually runs its course in a few days, and the person then returns to his normal state of mind and has



no desire for alcohol, or may even have an aversion to it. The attacks are often preceded by a state of depression, irritability and insomnia.

Dipsomania is not an alcoholic psychosis, i.e., it is not caused by alcohol. The condition is probably due to some psychogenic cause, and it has been regarded as a manifestation of a compulsive neurosis or of the manic-depressive psychosis.

### **Psychoses Caused by Drugs.**

Mental disorder may be caused by the introduction into the body of certain drugs or other substances. These consist chiefly of the so-called habit-forming drugs, such as morphia, cocaine and dagga, to which persons may become addicted. Other drugs, such as chloral, sulphonal, bromides and paraldehyde, which are given for the treatment of diseases, may also produce states of mental disorder if used in large doses or over long periods ; the administration of an ordinary dose, or even only the external application of some, such as belladonna, may cause delirium in a person who is abnormally susceptible. Poisoning by stinkblaar, a variety of stramonium common in South Africa, may cause delirium and coma.

Certain chemical substances, such as lead, mercury and carbon monoxide, may also cause psychoses, usually accompanied by lesions of the nervous system.

### **Morphinism.**

The habitual use of opium, or its alkaloid, morphine, causes progressive mental and physical deterioration. The drug may have been originally prescribed for the treatment of some disease, and the patient may have continued to take it in order to obtain the exhilarating and euphoric effect which it produces. Opium is usually self-administered by the mouth or by inhaling the fumes ; morphine, by hypodermic injection. In order to obtain the desired effect, the amount has gradually to be increased and, ultimately, the dose administered may be largely in excess of one which would be fatal to a normal person. The morphia addict becomes gradually more inefficient and untrustworthy, and shows symptoms of

general mental deterioration, especially in the moral sphere. He is unstable emotionally and subject to periods of depression and excitement; states of confusion sometimes occur, particularly on occasions when the administration of the drug is stopped for some reason. The withdrawal of morphine in a person who has been addicted to it produces the so-called abstinence or deprivation symptoms. The patient becomes depressed, restless and sleepless, his pulse is rapid and feeble, a cold sweat appears, and he may suffer from colic, vomiting and diarrhoea. These signs of mental and physical prostration vary in degree and may be alarming and dangerous in some cases.

*Treatment.*—Treatment is difficult because of the strength of the craving for morphine and the intensity of the abstinence symptoms. It is essential that the patient should be kept under strict supervision, as he will resort to any means or descend to any depth of deceit or dishonesty to obtain possession of the drug. This supervision cannot be carried out efficiently except in an institution. In the early stages, the patient should be kept in bed in a darkened room. Morphine is given at first, and the dose is gradually diminished every day until none is given, usually after about a week or ten days. The dose is reduced by degrees in order to mitigate the abstinence symptoms which would be severe if the morphine were abruptly discontinued.

### **Cocainism.**

Cocaine may be self-administered by hypodermic injection of the solution, or by nasal insufflation of the powder. At first it produces a feeling of well-being and increased energy. Its continued use causes a state of continuous excitement and restlessness and progressive mental and physical deterioration. In some cases, the drug produces a state of anxiety with hallucinations; the patient may experience sensations of crawling under his skin which he attributes to some insect, the so-called "cocaine bug", or even feel and see worms emerging from his body. He may also hear imaginary voices or show hallucinations of other senses.

**Dagga Intoxication.**

Dagga (*cannabis sativa*) is the name of a plant which is common in South Africa ; it is a variety of the substances known as hashish, bhang and Indian hemp which are used as habit-forming drugs in other countries. It is used by certain sections of the native population of South Africa for its stimulating and intoxicating effects and is usually administered by igniting the dried plant and inhaling the fumes. It induces a feeling of pleasurable excitement followed by drowsiness. If taken to excess it may produce a state of acute intoxication in which the person may be either excited and violent or stuporous. Delirium and chronic delusional states with hallucinations are also said to occur as a result of taking this substance.



## CHAPTER LVII.

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### **TOXIC PSYCHOSES**—(Continued).

INFECTION PSYCHOSES—EXHAUSTION PSYCHOSES—PSYCHOSES  
WITH DISORDERS OF METABOLISM.

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#### **PSYCHOSES CAUSED BY ENDOGENOUS TOXINS.**

These psychoses are caused by poisons which are produced inside the body. They include the forms termed the infection psychoses in which the toxaemia is the result of bacterial infection, and other forms which are due to auto-toxaemia, or poisons produced by metabolic disorders which accompany certain bodily diseases and conditions.

##### **Infection Psychoses.**

Mental disorder may occur as a complication or as a sequel of infectious diseases. The symptoms are apparently due to the action of the bacterial toxin on the tissues of the brain but the elevation of body temperature and the congestion of the tissues which accompany the disease may also be factors in the production of the condition.

The development of an infection psychosis depends on the nature and intensity of the infection and on the patient's powers of resistance; the disorder is more likely to occur in persons who have a psychopathic diathesis than in those with a stable nervous system.

Infection psychoses are classified as febrile delirium infection delirium and post-infection psychosis. Exhaustion psychoses, which are often due to the effects of exhaustion combined with infection, may be classified in this group.

**Febrile Delirium.**—This appears to depend on the degree of fever; its course corresponds to that of the pyrexia, and the symptoms are usually accentuated during the night. In mild forms, the patient may be only restless, irritable and generally hyperaesthetic. In more acute cases, consciousness is clouded and hallucinations and illusions appear; the patient

may imagine that the designs on the wall paper or carpet are really figures or faces, or that a piece of furniture is a dangerous animal. Remissions may occur at intervals, during which he regains his normal state of consciousness and realises that his experiences were imaginary. In the most acute forms, the clouding of consciousness may be profound and the patient has vivid illusions and hallucinations, particularly of sight; he sees changing scenes and converses with imaginary people; delusions develop, and he may imagine that there is poison in his food and refuse to eat or he may struggle with non-existent enemies. Speech is incoherent and, in grave cases, it may become indistinct. The patient may have transient periods when he is lucid, and may be able to answer questions rationally. In fatal cases the delirium is often replaced by coma before death occurs.

As a rule the disorder subsides with the decline of the fever. In some cases, the disease ends fatally and, in others, the delirium merges into another form of mental disorder, such as schizophrenia or the manic-depressive psychosis.

**Infection Delirium.**—This form appears to depend on the special toxins of certain diseases, such as typhoid fever and small pox, and it may develop at the onset of the disease when there is only slight fever or even none at all. After a prodromal period, during which the patient may have been sleepless and anxious, he may become acutely excited and restless, or pass into a state of delirium with confusion and hallucinations. Until the distinctive signs of the primary disease appear, it may often be difficult to diagnose the cause of the mental condition. The state of delirium continues for a few days or about a week, and it often subsides when the fever has developed.

Febrile and infection deliria add considerably to the gravity of the primary bodily disease, and a large proportion of the cases end fatally.

States of delirium may occur as complications of the acute specific fevers and also in association with malaria, influenza, acute chorea, and various septic states.

*Treatment.*—The treatment depends essentially on the nature of the primary disease. The patient should obtain as much rest as possible. He must be closely watched as he may jump out of bed and injure himself. It is important that he should take sufficient nourishment, and spoon or tube feeding may be needed. In order to assist in the elimination of toxins, the action of the bowels should be maintained and aperients or enemata given if required; fluids should be given freely and saline infusions may be administered; the mouth should also be cleaned regularly. In fever delirium with hyperexia, cold sponging or packs may be used to reduce the temperature. In cases with acute excitement and restlessness, warm baths or sedatives may be prescribed.

**Post-infection Psychosis.**—This form follows the infectious disease, and is usually characterised by depression and by intellectual and emotional weakness. In mild cases, the patient fails to recover his former physical and mental energy; he is despondent and hypochondriacal and may have transient hallucinations. In the more acute forms, he may be excited, confused and hallucinated, or acute delirium may develop. The delirium may be replaced by a state of stupor; in some cases, the psychosis may take the form of stupor from its onset.

Korsakow's psychosis, when it occurs as the result of toxaemia due to an infectious disease, such as influenza, is another form of post-infection psychosis.

The symptoms of post-infection psychosis closely resemble those of exhaustion psychosis, and it may be difficult to differentiate between the two conditions.

### **Exhaustion Psychosis.**

Exhaustion psychosis, or acute confusional psychosis, is the term applied to a form of mental disorder which may immediately follow some severe bodily or mental strain such as childbirth, a surgical operation, profuse haemorrhage, starvation, or mental or physical exhaustion. The condition is characterised chiefly by a state of restlessness, confusion and hallucinations. These symptoms are similar to



those of an infection psychosis and, in a large proportion of the cases, infection is probably the chief cause of the condition.

Exhaustion psychosis is fairly common and constitutes from one half to one per cent. of the total admissions to mental institutions.

In a mild case, after an initial state of anxiety and restlessness, the patient becomes disorientated and bewildered ; he fails to realise his surroundings, loses all idea of time and may not recognise his relatives. He sometimes shows some insight and can often answer correctly simple questions which involve no mental effort. In more severe forms, his consciousness is profoundly impaired, and he is anxious, depressed and confused ; he may pass into a state of acute delirium in which fleeting delusions and vivid hallucinations of various senses are prominent. Psycho-motor activity is increased, and he is restless and impulsive, and often talks incessantly and incoherently. Physically he is poorly nourished and shows signs of general prostration ; circulation is sluggish and the blood pressure is diminished ; cyanosis and coldness of the extremities are common and there is sometimes a slight degree of fever.

An exhaustion psychosis may sometimes take the form of profound stupor.

*Treatment.*—In these cases, careful nursing is of the utmost importance as there is an excellent prospect of recovery if the patient can be tided over the acute stages of his illness. During the early stages, he must be kept in bed in a quiet place and under constant supervision. He should be given a light nourishing diet, and tube feeding must not be delayed if he refuses to eat. The mouth should be cleaned regularly. Normal saline injections may be ordered, particularly in the event of collapse ; they help to eliminate toxins and to raise the blood pressure. Stimulants may also be needed. Excitement may be treated by warm baths and sedatives, and hypnotics may be prescribed to allay excitement and to procure sleep.

During convalescence, graduated physical exercises and light mental work may be beneficial, but the patient should not be allowed to attempt any heavy or onerous duties until he has fully recovered.

### **Psychoses Caused by Auto-intoxication Associated with Disorders of Metabolism.**

In nephritis, toxins may be produced in the body and cause the condition termed **uraemia**. In the cerebral form of this condition there are bodily signs of disorder of the nervous system, such as headache, drowsiness, convulsions, paralysis and coma. Some patients develop symptoms of mental disorder, which may take the form of delirium with confusion and hallucinations, or of depression with delusions of persecution.

States of depression and anxiety with hypochondriacal ideas sometimes occur in **diabetes**, and restlessness and irritability often precede the development of acidosis in this disease.

Mental disorder occurring during **pregnancy** is sometimes due to a toxaemia associated with this condition. The chief symptoms are usually morbid depression and delusions, but some patients are confused, restless and hallucinated. **Eclampsia**, a condition associated with albuminuria during pregnancy, is characterised by symptoms similar to those of uraemia.

**Diseases of the ductless glands** cause metabolic disorders, and they are sometimes accompanied by mental symptoms.

In **hyperthyroidism**, the secretion of the thyroid gland is excessive. This occurs in **exophthalmic goitre**, a disease characterised by distinctive bodily signs and often accompanied by mental symptoms. The patient is excitable and emotionally unstable, the mood is often one of anxiety and apprehension, and delirium sometimes develops in severe cases.

**Hypothyroidism**, or deficiency of thyroid secretion, occurs in the conditions called myxoedema and cretinism. In **myxoedema**, the patient is dull and apathetic, memory is

impaired and the process of thought is retarded. **Cretinism** is caused by a congenital deficiency of thyroid secretion ; it is characterised by distinctive physical anomalies associated with a state of mental defect.

The bodily signs of exophthalmic goitre and of myxoedema are enumerated in Chapter XXXIV, and cretinism, which is one of the clinical varieties of mental defect, is described in Chapter LXII.

Diseases of the pituitary, adrenal and reproductive glands are sometimes accompanied by states of mental disorder.

**Pellagra**, a disease which is supposed to be caused by a deficiency of Vitamin B in the dietary, is characterised by distinctive bodily symptoms accompanied by mental disorder. The disease is a chronic and progressive one and continues for several years, its progress being interrupted at intervals by partial temporary remissions. The bodily symptoms are described in Chapter XXXIII. The mental symptoms are varied ; periods of depression are common, particularly in the early stages, and transient acute stages of confusion accompanied by hallucinations and delusions also occur ; these are usually followed by an increase in the mental deterioration. The bodily and mental condition in the last stages may resemble that of dementia paralytica.



## CHAPTER LVIII.

### PSYCHOSES ASSOCIATED WITH SYPHILITIC DISEASE OF THE BRAIN.

#### DEMENTIA PARALYTICA—INTERSTITIAL CEREBRAL SYPHILIS.

Syphilitic disease of the central nervous system may occur in two forms, the parenchymatous and the interstitial. In the parenchymatous form, the grey matter of the cerebral cortex is the part chiefly affected; in the interstitial form, the disease is limited to the connective tissue, blood vessels and meninges. Each of these two forms has its own distinctive symptoms, but mixed cases, showing the symptoms of both, also occur. The parenchymatous form of brain syphilis is known as dementia paralytica, and the other form is called interstitial cerebral syphilis.

#### **Dementia Paralytica.**

Dementia paralytica, also termed **general paralysis of the insane** or parenchymatous cerebral syphilis, is an organic brain disease of syphilitic origin characterised by mental deterioration and bodily signs of disease of the central nervous system. If untreated, it usually progresses gradually and leads to a state of absolute dementia with complete paralysis and ends fatally within a few years after its onset.

Syphilis is the essential cause of the disease. The spirochaeta pallida, the micro-organism which causes syphilis, is found in the brains of patients who have died from general paralysis, and the blood and cerebrospinal fluid of those suffering from the disease give reactions which are positive to specific diagnostic tests for syphilis. It is estimated that about four per cent. of the persons who contract syphilis ultimately develop dementia paralytica, the average duration of the period between infection and the onset of the disease being about ten years. Dementia paralytica is a common form of mental disorder, particularly among the Eurafrican or coloured population of South Africa; about ten per cent. of the total number of male admissions to mental institutions

are cases of the disease. Men are more frequently affected than women, the relative proportion being about four to one, and the disease is more common in urban than in rural communities. It usually develops between the ages of thirty-five and fifty years, the average age of onset being about forty-two. In cases of congenital syphilis, the form known as juvenile general paralysis may develop during childhood or adolescence.

Head injuries, alcoholic excess and mental or physical stress may act as exciting causes of the disease in persons who have been infected with syphilis. A psychopathic diathesis is apparently also a predisposing factor.

In this psychosis, the brain and spinal cord show distinctive morbid changes. The brain is wasted and its weight is diminished, the meninges are thickened and adherent, and the cranial cavity contains an excessive quantity of fluid. Microscopically, the nerve cells show signs of degeneration and are diminished in number, and the amount of connective tissue is increased. Spirochaetes are found in the cortex. The nerve tracts in the spinal cord may also show signs of degeneration.

*Symptoms.*—As a rule the onset is insidious and, before the distinctive signs of the disease appear, there is usually a prodromal period during which the patient shows changes in personality and vague symptoms which are sometimes suggestive of other conditions, such as neurasthenia. His intellect becomes blunted and his judgment faulty; he is slack and inefficient in attending to his business, inclined to be extravagant and to indulge in foolish speculation; he is forgetful and fails to keep important appointments; he is often irritable and subject to fits of anger without sufficient cause. He loses his former ethical and aesthetic standards, becomes self-indulgent, slovenly and careless, and shows a disregard for recognised social conventions; a man whose character has been irreproachable may become grossly immoral, take to drink, or even commit paltry thefts. He often complains of vague pains, headache, dizziness and fatigue. He may have



difficulty in walking or in passing urine. In a few cases the onset is sudden, often in the form of an apoplectiform or epileptiform seizure.

These premonitory symptoms become gradually more pronounced and, after a while, manifestations of general mental deterioration become obvious. Consciousness becomes clouded and orientation more and more impaired ; thought is retarded and sluggish ; memory is lost, at first for recent events, and, later, for both recent and remote ; the emotional state is unstable, and the patient may be irritable, euphoric or depressed ; judgment shows progressive impairment, and the patient has no insight. Delusions are common ; these are changeable and absurd and may be grandiose, melancholic or persecutory. Hallucinations occur in some cases.

The bodily signs are prominent features of the disease. **Tremors** are an early sign and gradually become extensive and pronounced ; they affect the lower part of the face, the tongue and hands, and may be either fine or coarse ; the tongue may be alternately jerked in and out of the mouth when the patient is asked to show his tongue. The face has often a characteristically fatuous and silly expression, associated with an underlying appearance of sadness. **Inco-ordination** appears soon and affects at first the finer movements, causing disorders of articulation and of writing ; **articulation** is slurring and hesitating, and the patient may be unable properly to pronounce such words as hippopotamus or episcopal ; **hand-writing** is shaky, and letters, syllables and words may be omitted. As the inco-ordination increases, the gait becomes unsteady and, ultimately, all movements of the body are affected. There is progressive weakness and wasting of the muscles. The deep reflexes may be diminished or exaggerated. The organic reflexes, such as those of the bladder, rectum and pharynx, may be lost, causing **retention or incontinence of urine or faeces** and choking on attempting to swallow. The **pupils** may show distinctive anomalies in shape, size and reaction ; they may be unequal, oval in shape or irregular, and the light reflex may be lost. The **Argyll Robertson pupil** is sometimes present and is an important sign in the diagnosis



of the disease. **Patches of anaesthesia** sometimes develop. **Trophic disorders** are common ; the bones may be abnormally fragile ; eruptions, such as herpes and erythema, may appear, and there are sometimes subcutaneous haemorrhages producing a condition such as haematoma auris ; the tissues generally tend to waste, and bedsores are likely to develop in the later stages. **Seizures** are frequent ; they may occur at any stage and may take the form of apoplectiform or epileptiform attacks. An **apoplectiform seizure**, also called a congestive attack, is sometimes preceded by flushing of the face and an increase of mental dullness ; during the seizure, which may last only a minute or for hours, the patient loses consciousness and breathes stertorously ; the attack may be followed by transitory paralysis of some part of the body. An **epileptiform seizure** may consist only of a temporary loss of consciousness, or the unconsciousness may be accompanied by convulsions ; it may resemble an epileptic fit, but it often lasts several hours instead of only a few minutes, the convulsions are less violent than in epilepsy, they usually affect one side of the body more than the other, and the separate successive stages, characteristic of the epileptic fit, cannot be differentiated. General paralytics may have an occasional attack of **fever** without any obvious cause.

The progress of the disease is sometimes interrupted by **remissions**. During these, the symptoms of mental disorder subside or may even disappear completely for a time and the bodily condition improves. Remissions occur most frequently in the early stages of the disease and are most common in the agitated and expansive types. Their duration is variable.

### **Clinical Types.**

Four chief clinical types of dementia paralytica are recognised. Demented, expansive, agitated and depressed types are described according to the predominance of certain symptoms, but the distinctive features of the different types are not always well defined and transitions between them sometimes occur. The mental symptoms in general paralysis appear to be determined to some extent by the previous personality and temperament of the patient.

The **demented type**, which constitutes more than one third of the cases, is characterised by an insidious onset and gradually increasing mental and physical deterioration without pronounced excitement, exaltation or depression. Remissions are rare and the average duration is about two years.

The **expansive type** includes those cases in which euphoria and grandiose delusions are prominent symptoms. The onset is usually insidious, but may be sudden. When the disorder has developed, the patient is excitable, exalted and euphoric and shows extravagant expansive delusions, e.g., he may believe that he commands armies, that he can fly to the moon, or that he is the wealthiest or strongest man in the world; he offers valuable presents to people about him and, before he is placed in hospital, he may make extravagant purchases or wild speculations. The evolution of this type is comparatively slow and remissions are frequent.

The **agitated type** is characterised by a sudden onset and a rapid and acute course. The patient becomes delirious and confused, expresses fantastic grandiose delusions, and is excited, restless and noisy. Some of these cases end fatally after a few weeks; in others, the excitement subsides and the condition is transformed into one of the other types. Remissions are fairly common in this form.

The **depressed type** begins insidiously; the patient becomes depressed and develops melancholic delusions of self accusation or of persecution; he sometimes refuses food and may attempt to commit suicide. This type runs a fairly rapid course and remissions are infrequent.

Juvenile, tabetic and spastic forms of the disease are also described.

### Stages.

It is customary to divide dementia paralytica into three stages, in accordance with the progress of the disease, as follows:—

- (1) the initial stage of prodromal symptoms and onset;
- (2) the stage of full development;
- (3) the terminal stage of dementia and paralysis.



The boundaries between these stages are difficult to define in a large proportion of the cases.

In the **first stage**, after a prodromal period during which the patient shows indefinite manifestations chiefly consisting of changes in personality and disposition, symptoms of general mental deterioration appear and gradually progress; the patient becomes incapable of doing his work or looking after himself, and his memory, judgment and all his mental faculties show increasing signs of degeneration; tremors and other bodily signs may appear early in the disease and become prominent during this stage.

In the **second stage**, the fundamental symptoms of the disease, both mental and physical, become prominent; seizures begin to occur and mental deterioration and muscular inco-ordination are more pronounced; the patient is still able to get about, and can dress and feed himself as a rule.

In the **third stage**, seizures are frequent. The patient becomes bedridden and shows signs of profound mental and physical deterioration. He is oblivious of his surroundings and more or less completely paralysed; he loses control of his sphincters, shows a tendency to develop bedsores, and becomes wasted, emaciated and exhausted. Ultimately death occurs from exhaustion or from some intercurrent disease such as broncho-pneumonia or dysentery.

*Treatment.*—General paralytic patients should be kept under close observation so that the nurse can quickly detect indications of the various complications which need special and immediate treatment. Seizures may occur at any stage, and their occurrence should be immediately reported. Many patients have transient attacks of fever without any apparent cause and these may not be noticed unless the nurse is on the lookout for indications of pyrexia. Retention of urine is a frequent and dangerous complication; the nurse should take note of the quantity of urine passed and regularly inspect the patient's abdomen to detect any sign of distension of the bladder; the fact that urine is constantly dribbling from the



urethra may be an indication that the bladder is overdistended. Signs indicating retention should be immediately reported, as rupture of the bladder may occur unless the condition is relieved without delay. The bowels may become overloaded, and aperients or enemata may be prescribed to empty them. Some patients are in the habit of bolting their food and are apt to choke themselves; others, particularly in the later stages, may choke as a result of loss of the pharyngeal reflex and paralysis of the muscles; these patients must be closely watched at meals and allowed only mince-meat and soft varieties of food.

General paralytics are unsteady on their legs, and they are often quarrelsome and violent; on account of the brittleness of their bones, special care is needed to prevent them sustaining serious injuries as a result of falls or struggles.

Special precautions must be taken to prevent the development of bedsores, particularly in the last stage of the disease.

Drugs, such as preparations of arsenic, mercury and bismuth, which are used successfully in the treatment of other forms of syphilis, are not effective when administered alone in the treatment of general paralysis and have little influence on the course of the disease. Tryparsamide, an organic arsenical compound with a special affinity for the nerve tissues has, however, been found to give better results, particularly in combination with **pyrexial treatment**.

It had been noticed for many years that general paralytics often improved temporarily during attacks of fever and, as a result of this observation, it was thought that the induction of fever by artificial means might prove an effective method of treating the disease. Various fever-producing preparations were used, but successful and permanent results were not obtained until Dr. Wagner von Jauregg of Vienna, in 1917, produced fever in a number of paralytics by inoculating them with malaria. This method of treatment has proved to be the most effective means of treating general paralysis, a disease formerly regarded as hopelessly incurable. It has produced

recovery in many cases and, in others, the progress of the disease has been arrested. The patient to be treated is infected with a benign strain of malarial organism and allowed to have about eight to twelve paroxysms of fever ; the attacks of fever are then terminated by the administration of quinine or an arsenical compound. A large number of recoveries have occurred as a result of this treatment by the artificial induction of malarial fever, particularly in recent cases and in those of the expansive type.

During pyrexial treatment the patient should be nursed as if he were suffering from any acute febrile disease ; the temperature must be taken at frequent intervals and the patient carefully watched to detect the onset of hyperpyrexia, signs of collapse, or other complications.

The windows and doors of rooms occupied by patients undergoing malarial treatment must be screened to prevent the entrance of mosquitoes which might spread malaria in the neighbourhood.

Vaccines, other preparations and diathermy have also been used to produce fever, but with less successful results.

Pyrexial treatment is usually followed by the administration of arsenical or other anti-syphilitic drugs.

### **Psychoses with Interstitial Cerebral Syphilis.**

In this form of syphilitic brain disease, the meninges and blood vessels are chiefly affected and the actual nerve tissue is not involved. In some cases, however, general paralysis may develop as a result of the extension of the disease to the parenchymatous tissue.

Interstitial cerebral syphilis occurs in meningeal, gummatous and arterio-sclerotic forms.

The **meningeal form** may appear within five years of infection, sometimes within one. Its onset is sudden, and bodily and mental symptoms quickly develop. The bodily manifestations consist chiefly of headache, dizziness, and signs

of lesions of cranial nerves, such as ptosis, strabismus and facial paralysis ; convulsions also occur and may be followed by aphasia, hemiplegia, or other form of paralysis. Mentally the patient may be dull and lethargic, or he may suffer from delirium and hallucinations. Temporary periods of recovery followed by recurrences often occur in this form.

The **gummatous form** is infrequent. The symptoms are those characteristic of a tumour of the brain together with local signs which depend on the site of the lesion. The mental symptoms may resemble those of meningitis.

The **arterio-sclerotic form** is the most common. The chief symptoms are states of confusion, which often occur in repeated attacks, and paralysis or other effects of vascular lesions.

The syphilitic form of cerebral arterio-sclerosis is distinguished from other forms by the positive reaction to serological tests for syphilis and the fact that it often develops at an earlier age.

*Treatment.*—The interstitial form of cerebral syphilis responds to the administration of arsenical preparations and other drugs used in the treatment of syphilis. Some patients recover, but the prospects of complete and permanent recovery are poor.



## CHAPTER LIX.

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### PSYCHOSES ASSOCIATED WITH ORGANIC DISEASES AND INJURIES OF THE BRAIN.

#### SENILE PSYCHOSES—ARTERIO-SCLEROTIC PSYCHOSES.

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##### **Senile Psychoses.**

The senile psychoses are mental disorders associated with old age and are characterised by progressive mental deterioration accompanied by degenerative changes in the brain. This condition of deterioration is also termed **senile dementia**.

Normally, the onset of senility manifests itself by a gradual decline of bodily vigour and mental capacity. The age at which these manifestations begin to appear varies with different individuals but is, on the average, about sixty-five years. It is sometimes difficult to distinguish a slight degree of deterioration from a natural state of old age, and the diagnosis of senile dementia depends on the severity of the symptoms of deterioration and on the ability of the individual to continue to look after himself and his affairs. The term "second childhood" is sometimes used to describe minor degrees of senile enfeeblement.

Senile psychoses appear, as a rule, between the ages of sixty-five and seventy-five years ; mental disorder occurring during this time of life is not, however, always a senile psychosis. Their development may be precipitated by various conditions such as emotional shocks, worries, illnesses, head injuries and alcoholism.

Senile dementia is associated with morbid changes in the central nervous system. The weight of the brain is diminished and the convolutions are wasted ; the ventricles are dilated and the quantity of cerebro-spinal fluid is increased. Microscopically, the nerve cells are degenerated and the amount of neuroglia is increased. The condition is often accompanied by sclerosis of the cerebral arteries.

*General Symptoms.*—The onset is gradual and is characterised by change of disposition and enfeeblement of all the functions of the mind. Perception is blunted, comprehension is impaired and memory is gradually lost. The patient's behaviour tends to regress to the instinctive and egoistic level characteristic of the earliest years of life, the highest mental refinements, such as the ethical sense, self-control and judgment, being the first to disappear. The failure to perceive clearly and the loss of memory cause disorientation. Attention is impaired and the association of ideas is sluggish and stagnant ; the patient is inaccessible to new ideas and his interests become gradually narrowed. Failure of memory is one of the most prominent symptoms ; in the early stages, memory for recent events is particularly affected but, as the dementia increases, the memory defect becomes progressively more pronounced until, ultimately, memories of childhood may be the only ones which survive. The patient forgets where he has put his belongings and suspects people of stealing them, he forgets he has just had a meal and complains that he is being starved, and he tends to repeat the same stories over and over again. Senile patients often imagine that they are living in the days of their childhood ; an old lady of seventy-five years, when asked if she were married, replied in a coy manner that her mother said she was too young to marry ! The stock of ideas becomes more impoverished as old memories are gradually lost and nothing new is gained to replace them. The emotional stage varies ; depression and irritability are common ; in many cases the emotions are superficial and mobile, and the patient may weep and laugh alternately for no apparent reason ; some are apathetic, and the majority become so in the later stages. The patient has no insight, and delusions of persecution are common ; he is suspicious and often imagines that he is being robbed. Hallucinations and illusions are frequently present. Some behave quietly ; others are restless, particularly during the night. Their habits tend to regress and become degraded ; they collect and hoard rubbish, become uncleanly, and show shameless or perverted sexual behaviour.



There are distinctive bodily signs. The skin is wrinkled, the muscles waste, the gait is shuffling and speech is slow. Tremors are common and the handwriting is shaky. Insomnia is a frequent symptom, and the patient often suffers from headache and attacks of dizziness. The mental and physical deterioration gradually increases, and the duration of the disorder may extend over a period of several years. Ultimately death occurs as a result of senile changes, an apoplectic seizure or some intercurrent disease.

### **Varieties.**

The following varieties of senile psychosis are described.

**Simple deterioration** is a form which shows the common general symptoms of the psychosis such as memory defect, decrease of intellectual capacity, narrowing of interests, irritability and suspiciousness combined with manifestations of general physical deterioration.

**Presbyophrenia** is characterised particularly by loss of memory and disorientation. It is a form which is relatively common among women. The patient is often restless and loquacious ; she may be attentive and capable of conversing rationally for a time on matters immediately presented to her unless she is required to exercise her memory ; she will, however, probably have no recollection of the conversation a short while afterwards. The amnesia is sometimes combined with fabrication, and the condition resembles that of Korsakow's disease.

**Alzheimer's disease** is a form in which the mental symptoms are similar to those of presbyophrenia, but the age of onset is earlier and its progress is more rapid. In addition to the mental symptoms, there are signs of lesions of the nervous system, such as paralysis or aphasia, and distinctive morbid changes are found in the brain.

**Delirious states** occur, with profound confusion, restlessness and hallucinations ; the delirium often appears in repeated attacks.



**Depression and agitation** are common in certain forms.

**Delusional forms** are frequent ; the delusions are usually changeable and disconnected but, in some cases, partly systematised delusions, mainly of persecution, may occur.

*Treatment.*—Senile patients are often unsteady on their legs and apt to fall ; loose rugs, too highly polished floors and defective footgear may be dangerous. Restless patients should be kept under careful supervision ; injuries from falls may be avoided by placing mattresses on the floor or using low bedsteads provided with side pieces.

Food, which should be light and easily digestible, is best given in small quantities at frequent intervals. The circulation is often sluggish, and patients should be warmly clothed in cold weather ; a warm bed with a hot-water bottle may enable them to sleep. They should be regularly washed, and special measures must be taken with those who are uncleanly to prevent them becoming offensive or developing bedsores.

Aperients and enemata may be needed to empty the bowels, and the nurse should notice if the patient has any difficulty in micturition.

Prolonged warm baths may be given for restlessness, and alcohol or other drugs may be prescribed to procure sleep.

Senile patients must be carefully watched as they are apt to wander away and get lost.

### **Psychoses with Cerebral Arterio-sclerosis.**

In cerebral arterio-sclerosis, there is a hardening and thickening of the walls of the arteries of the brain, and the blood supply of the tissues of the brain is diminished. Symptoms may result from the insufficient blood supply, or may be caused by damage to the brain from cerebral haemorrhage or thrombosis, conditions which are associated with arterio-sclerosis.

Cerebral arterio-sclerosis may be present without any symptoms of mental disorder ; the development of a psychosis depends on the extent and situation of the damage to the brain and, also, on the constitution of the individual as regards his mental stability. In some cases, the cerebral arteries are the only vessels in the body affected by sclerosis.

The disease appears, as a rule, between the ages of fifty and sixty years and is more common among men than among women. Prolonged mental and physical strain tend to bring on the condition, and alcoholism, kidney disease and high blood pressure are prominent factors in its etiology. Syphilis is also a cause ; syphilitic arterio-sclerosis is described as one of the forms of interstitial cerebral syphilis.

*Symptoms.*—The mental symptoms are mainly those of deterioration, such as reduction of mental efficiency, loss of memory, difficulty in thinking and loss of control of the emotions ; the deterioration is progressive but is often interrupted by temporary remissions, which may be partial or complete. In the early stages, the patient frequently has some insight and realises his incapacity. He is often irritable and is easily fatigued ; periods of depression and temporary paranoid states sometimes occur, and attacks of confusion and restlessness are common.

The general bodily symptoms are chiefly headache, attacks of dizziness or faintness, and sleeplessness. In addition, the patient is subject to epileptiform attacks and to apoplectic seizures which may be followed by paralysis, aphasia and disorders of sensation.

Arterio-sclerosis is often associated with senile dementia, and the symptoms are similar in many respects. In senile dementia, however, the deterioration is more general and more uniformly progressive ; in arterio-sclerotic psychosis the mental disintegration is less pronounced and the progress is irregular and may be interrupted by remissions. The occurrence of paralysis and other results of vascular lesions in the brain are characteristic manifestations of arterio-sclerosis.

*Treatment.*—Light occupation may be beneficial, but the patient should not engage in strenuous mental or bodily work. These patients are often irritable and quarrelsome, and tact is needed in dealing with them. Regular action of the bowels should be obtained, by the administration of aperients, if necessary. Sleeplessness may be treated by warm baths, and sedative drugs may be prescribed to allay excitement and procure sleep. When the patient is paralysed and bedridden, precautions should be taken to prevent the development of bedsores.



## CHAPTER LX.

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### **PSYCHOSES ASSOCIATED WITH ORGANIC DISEASES AND INJURIES OF THE BRAIN—(Continued).**

ENCEPHALITIS—HUNTINGTON'S CHOREA—CEREBRAL TUMOUR,  
ETC.—TRAUMATIC PSYCHOSES.

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#### **Epidemic Encephalitis.**

The nature and bodily signs of epidemic encephalitis, or "sleepy sickness", are described in Chapter XXXI.

In the acute or early stage of this disease, mental symptoms may appear either in the form of lethargy or of delirium. In the lethargic form, the patient is drowsy or somnolent, or, in severe cases, comatose; he can sometimes be roused from the state of lethargy and, during the waking periods, which may occasionally interrupt the somnolence, he is often restless and noisy. The sleep rhythm may be inverted and, in these cases, the patient sleeps during the day and is wakeful at night. In the delirious form, the patient is confused, restless and hallucinated from the onset.

In the late or chronic stage of the disease, the mental symptoms consist chiefly of manifestations of general deterioration and of change of personality. In adults, a state of psycho-motor retardation occurs, and the patient is dull, lacking in interest and initiative, and his actions are slow and laborious. In some cases, a state of stupor resembling that of catatonia may develop; in others, the patient may become abnormally excitable and loquacious. In children, the chronic stage is often marked by a change in disposition and by behaviour disorders. A child, who has previously been normal and well behaved, may become restless, mischievous and impulsive; his moods may change rapidly for no apparent reason, and his emotional reactions are unstable and uncontrolled. He may show erotic and other antisocial behaviour of various kinds. Deterioration of moral sense without impairment of intellect may also occur in adults.

### **Huntington's Chorea.**

Huntington's chorea is a rare form of disease of the nervous system ; it is characterised by distinctive mental and bodily symptoms and by specific morbid changes in the brain.

The disease is transmitted directly from parent to child, and it is the only form of mental disorder in which there is definite evidence of hereditary transmission according to Mendelian laws.

It occurs usually between the ages of thirty and fifty years. The mental symptoms are those of general progressive deterioration ; the patient becomes slovenly and indifferent to social conventions, his memory fails and his intellectual capacity diminishes. The deterioration gradually increases, but its progress may sometimes be interrupted by temporary remissions. Delusions of a fantastic type often develop.

The bodily signs are chiefly choreiform movements of a characteristic type and inco-ordination of voluntary movement. The chorea first affects the legs, hands and face, and the patient makes peculiar, slow, lurching, swaying and clutching movements and facial grimaces. Voluntary movements are irregular and jerky, speech is hesitating and handwriting is shaky.

The disease may continue for many years ; the choreiform movements persist until the end ; in the final stages, the patient is bedridden, helpless and demented.

### **Psychoses with Cerebral Tumour, etc.**

**Cerebral Tumour.**—Mental disorder occurs in a fairly large proportion of cases of cerebral tumour. The symptoms are indefinite and varied ; some patients show progressive mental deterioration, others are delirious and confused ; in others, a state of apathy or of euphoria may develop. Auditory hallucinations often occur with tumours involving the temporal lobes, and a tumour in the parieto-occipital region may be accompanied by visual hallucinations.

**Cerebral Abscess.**—In this disease, the mental symptoms resemble those of cerebral tumour. The patient may be restless and confused, and coma often develops at the end.

**Multiple Sclerosis.**—In multiple or disseminated sclerosis, a state of progressive mental deterioration resembling that of dementia paralytica may occur. Some patients are euphoric, but the mood is usually variable. Uncontrollable outbursts of laughter or weeping without any apparent cause are sometimes a prominent feature in this disease.

**Paralysis Agitans.**—This disease is characterised by the gradual development of muscular weakness, tremors and rigidity. The tremors, which appear first in the hands, are most pronounced when the parts are at rest. Mentally, these patients are sometimes depressed and suspicious, and some degree of mental deterioration may develop.

### **Traumatic Psychoses.**

Traumatic psychoses are caused by injury to the brain. They occur comparatively rarely and only a very small proportion of cases of head injury develop mental disorder. Injury to the head may also act as an exciting cause in precipitating the onset of other forms of mental disorder, such as schizophrenia, manic-depressive psychosis and dementia paralytica.

The symptoms vary and depend to a great extent on the situation and extent of the damage to the tissues of the brain.

The following are the most common **clinical forms** of these psychoses.

**Traumatic Delirium.**—This form appears after the period of coma or impairment of consciousness which may follow an injury to the head ; in some cases, a period during which the patient is lucid and shows no signs of mental disorder intervenes between the injury and the development of the psychosis.

The symptoms consist mainly of confusion, impairment of memory and restlessness. The association of ideas is sluggish, the patient is dull and confused, and thinking is apparently a



difficult and laborious process ; he has usually no memory of the accident which caused the injury and, sometimes, of events which immediately preceded it. The loss of memory may be accompanied by fabrication. The condition may last for a few days or for several weeks. Some patients recover, some become demented ; in others, the condition ends fatally.

**Traumatic dementia**, or traumatic constitution, is the term used to denote the change in personality or disposition which sometimes follows an injury to the head. The onset is insidious and the condition may not appear until some time after the occurrence of the injury. The patient's capacity for work is diminished, he thinks slowly, and his memory is impaired ; he is often irritable and may become violently angry with little provocation. There may be moral deterioration and abnormal susceptibility to the effects of alcohol. Physically, the patient often suffers from headaches and attacks of dizziness, and becomes quickly fatigued. The condition is a chronic one and the symptoms tend to become gradually more pronounced.

**Traumatic Epilepsy.**—This form occurs most frequently after severe injuries in the parietal region. It may not appear for months or even years after the occurrence of the injury. The symptoms are similar to those of traumatic dementia combined with those of epilepsy. In some cases, it is probable that the individual had a latent tendency to epilepsy and that the injury acted as a precipitating factor in the development of the condition.

*Treatment.*—Cases of head injury should be kept in bed and under observation for some time after the accident. Operative treatment may be needed in some cases.

## CHAPTER LXI.

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### **CONSTITUTIONAL PSYCHOPATHIC STATES.**

The term, psychopathic state, is used to denote a condition in which the individual affected is mentally abnormal and exhibits instinctive, emotional or volitional anomalies, but is not mentally disordered or intellectually defective. In fact, the intelligence of many of these so-called psychopathic personalities is above the average. The condition is usually congenital, and indications of the morbid mental constitution may have been observed in childhood. Transient and indefinite attacks of mental disorder are common among this class.

A large proportion of these cases exhibit anti-social proclivities of various kinds, and many of them are constantly in rebellion against the laws of the land and the conventions of the community in which they live.

The condition may assume various forms and the following are some of the different varieties which have been described.

**Socially Defective Personalities.**—The individuals belonging to this group, the so-called moral imbeciles, have usually shown anti-social propensities from an early age. During childhood they are unprincipled, unreliable and unamenable to discipline. Their conduct is often depraved and vicious, and many of them are in the habit of persistently lying or stealing, often without any apparent object. Some appear to derive pleasure from wanton cruelty to animals. They are neither ashamed of their misbehaviour nor influenced by correction or punishment. In later life, their anti-social propensities manifest themselves in criminal actions; they may steal regardless of the consequences of their actions or the worthlessness of the articles which they acquire, and they often take little precaution to avoid detection. They are lacking in judgment and foresight, and they fail to learn that their actions are unwise and unprofitable. The incorrigible misbehaviour of many of this class necessitates their being placed under control and supervision for the protection of society and of themselves.



**Inadequate Personalities.**—This term is applied to a group who never succeed in making good and who prove to be failures in life, often in spite of advantages of education, opportunity and inherited financial resources. Many of them join the army of the unemployable and wander about the country subsisting to a great extent on charity.

**Pathological Liars.**—This term is used to designate a group of psychopathic personalities who are characterised by an irrepressible habit of lying. They make fantastic statements, often without any obvious reason and without any prospect of obtaining any advantage for themselves. Their statements can usually be disproved easily, but they show little sign of shame or remorse when confronted with the true facts. Some of their fabrications probably represent wish fulfilments, such as episodes which the individual would like to have experienced, and imaginary incidents in which he played the part of the hero. Some unscrupulous individuals of this class not only lie about their position and exploits, but act the imaginary part as well and succeed in imposing on credulous people and swindling them.

**Emotionally Unstable Personalities.**—This is one of the commonest varieties, and manifestations are often evident during childhood. These individuals become unduly elated or depressed with little or no reason, their mood is mobile, and they are apt to fly into a passion without provocation. Their emotional instability affects their judgment, and they are inclined to be improvident and to take to drink.

**Kleptomania.**—This term is applied to a form of psychopathic personality in which the individual has a habit of stealing and pilfering whenever an opportunity occurs. These persons may be well off financially and have no need or use for the articles stolen, but they appear to derive some personal gratification from the thefts. They often show a disregard for the consequences of their action and little sign of genuine remorse when they are detected; sometimes the thefts are limited to a certain variety of article. Some of these cases may be regarded as forms of impulsive obsession.



**Sex Perversions.**—This is a condition in which the sex instincts are abnormal or perverted in some way. The perversion may assume various forms. Sexual inverts, or homosexual individuals, are those who are sexually attracted by members of their own sex and are more or less completely lacking in normal feelings for the opposite sex. The condition is a common one and occurs in both sexes; it sometimes brings the individual into conflict with the criminal law. The perversion may be constitutional or may be acquired in early life. Masochism is a condition in which the individual obtains sexual gratification by being subjected to pain or indignities, and sadism is a form of perversion in which sexual pleasure is experienced as a result of the infliction of pain on others. In fetichism, sexual pleasure is particularly associated with certain articles, often articles of apparel.

There are various types of personality which are accepted as coming within normal limitations unless their characteristics are present in an exaggerated degree. Among such types are the cyclothymic person, who shows excessive emotional response and is subject to unaccountable changes of mood, the schizoid person, who has a shut-in temperament and is introverted and aloof, and the paranoid individual, who is distrustful and suspicious.

Many individuals of superior intelligence find it difficult to adapt themselves to the demands of their environment and are regarded as strange or eccentric.

## CHAPTER LXII.

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### **MENTAL DEFECT.**

Mental defect, amentia, or oligophrenia, is the term applied to a condition in which the mind or intellect has never attained a normal standard of development. The mind may have failed to mature either because of an inherent incapacity of the brain to develop or because of the arrest of its development at an early age as a result of disease or injury of the brain. Mental defect must be distinguished from mental disorder. The former is a condition of incomplete development of the mind ; the latter is a disturbance or disorganisation of mental functions already developed. In some cases, however, mental disorder occurs in persons who are mentally defective.

The community is composed of individuals of different grades of intelligence, and a normal standard is difficult to define precisely. Although a wide range of variation is accepted as being within normal limits, there is a level below which intellect is regarded as pathologically defective.

The real criterion of mental defect in an adult is a social one, and is based on the capacity of the individual to adapt himself to the conditions and requirements of the community in which he lives and to maintain himself without external assistance. An individual who is unable to adapt himself is regarded as mentally defective only if his incapacity is the result of lack of intelligence. He is not, however, classed as mentally defective if the incapacity is the result of bodily disease, mental disorder, or external social and economic conditions, such as unemployment. The difficulty of adaptation has tended to increase during recent years as a result of the complications associated with the advance of civilisation and the increased intensity of the struggle for existence ; a higher standard of intelligence is therefore required under modern conditions than was needed in more primitive ages.

Investigations have revealed that nearly one per cent. of the population are mentally defective, and the sociological importance of the condition in relation to the problems of poverty, crime and disease has been realised only comparatively recently.

The causes of mental defect are endogenous and exogenous.

The **endogenous or inherited cause** is an inborn incapacity of the mind to develop normally as a result of a fault in the germ plasm. This is a frequent cause and there is a family history of mental abnormality in about seventy-five per cent. of the cases of mental defect. It may operate alone, and also as a predisposing cause in combination with an exogenous factor.

The **exogenous or acquired causes** operate after conception. They include conditions which act before the birth of the child, such as disease of the mother during pregnancy, injury to the foetus in the uterus or damage to the brain during birth. After birth, the brain may be damaged and the development of the mind retarded or arrested by injury or by disease. For example, the acute infectious fevers may be accompanied by meningitis or encephalitis, or damage may be inflicted by cerebral haemorrhage or thrombosis. Deficiency of thyroid secretion is the cause of a certain type of mental defect, and the normal development of the mind may be arrested by the loss of sight and hearing.

The changes in the brain which are associated with mental defect vary from slight abnormalities to gross lesions in which extensive or important parts of the brain are absent or obliterated. In the endogenous or **primary form**, the changes consist chiefly of imperfect development and a deficient number of nerve cells ; in the exogenous or **secondary form**, they consist of lesions caused by inflammation or haemorrhage.

Various scales of tests are employed to measure the degree of intelligence or the intellectual capacity. Most of them are based on a scale originally framed by Binet and Simon in 1908, as a result of their investigations into the development of the intelligence in French school children. The scales consist of a



graduated series of standardised tests arranged in order of difficulty, appropriate tests being allocated to every year of age between three and sixteen.

The scales are designed so as to test the various mental processes such as perception, attention, memory, judgment and the general knowledge or range of information of the individual.

These tests render it possible to measure or estimate the **mental age** of the individual, i.e., his age as regards his mental development and intelligence. For example, if a child aged twelve years is unable to pass tests higher than those prescribed for one six years old, his mental age is only six although his **chronological age**, or age in actual years, is twelve.

The **intelligence quotient**, or **I.Q.**, is the term applied to the ratio of the mental age to the chronological age; it is usually expressed as a percentage, e.g., if a child of twelve has a mental age of six, his I.Q. is 50, i.e.,  $\frac{6}{12} \times 100$ . The development of intelligence as such is supposed to cease about the age of sixteen years and, in calculating the I.Q. of a person above that age, the chronological age is taken as being only sixteen; in some scales an age lower than sixteen is taken. An I.Q. of less than 70 is sometimes regarded as evidence of mental defect. This method of determining the mental capacity of an individual by means of intelligence tests is, however, an arbitrary one and the result cannot be accepted as definite proof of the presence or absence of mental defect; the social capacity is the true criterion.

There are numerous physical anomalies associated with mental defect. These are called **stigmata of degeneration**. They are most common in the lowest grades and their presence is an indication that the condition is a primary one, i.e., inherited. It should be borne in mind that, although these anomalies are more frequently observed in the mentally defective, some of them also occur in normal people. The commonest stigmata are the following:—The skull may be abnormal in size, shape, or both; microcephalic means an abnormally small skull, and macrocephalic one above the average size, the circumference of a normal adult skull being

about 22 inches ; lack of development of the frontal region gives the skull a cone or egg-shaped appearance, called oxycephalic, or the skull may be flattened at the sides or boat-shaped, a condition called scaphocephalic ; in certain cases the skull is globular or spherical. The palate is sometimes abnormally high or shaped like the letter V, and the jaw may be malformed or contracted and the teeth crowded. The ear, nose and eyes may be misshapen or abnormal in other respects. The hands may be broad, and supernumerary fingers and webbed fingers and toes are sometimes seen. The stature is usually below the average and the figure ungainly. The heart, kidneys and genital organs sometimes show structural anomalies, and hernia is common.

The mentally defective are classified according to the **degree of defect** as feeble-minded, imbeciles and idiots.

**Feeble-mindedness** is the mildest or highest grade of mental defect. The feeble-minded, or **morons**, are the most important class of the mentally defective and their number is about four times as great as that of the imbeciles and idiots combined. The I.Q., in this class, ranges from 50 to 70, and the mental age, in the adult moron, from seven to eleven years. The adult moron cannot support himself as, on account of his inferior intelligence, he is incapable of competing on equal terms with normal people. He is unable to look after himself and his affairs. Feeble-minded children are incapable of learning in ordinary schools. The condition varies in degree ; the highest grade can write and perform simple calculations, and some can do complicated work under supervision ; the lowest have no school knowledge and are capable only of such work as running errands and scrubbing floors.

**Imbecility** is the medium or middle grade of mental defect. Imbeciles are unable to look after themselves. The I.Q. is between 25 and 50, and the mental age, in the adult, between three and seven years. The highest grade can dress and feed themselves and do simple work under supervision, but the lowest are incapable of any useful work, even under supervision.



**Idiocy** is the most pronounced or lowest grade of mental defect. An idiot is incapable of protecting himself against ordinary physical dangers ; he does not realise that fire may burn him or that he may be killed by being run over by a motor car or by falling into deep water. An idiot has an I.Q. of less than 25 and a mental age, in the adult, of less than three years. Idiots are unable to talk as a rule and cannot feed or attend to themselves ; the lowest grade do not even experience the sensation of hunger and thirst and are capable only of respiration, digestion, assimilation and excretion.

The mentally defective are also classified according to the clinical signs which they present. The chief **clinical varieties** are the following :—

The **simple** variety consists of those cases without distinctive clinical features or physical abnormalities ; the majority of mental defectives fall within this group.

The **microcephalic** variety consists of those with abnormally small crania, which are often oxycephalic as well. A person with a skull less than seventeen inches in circumference is usually classified as microcephalic. Size is not, however, the only criterion ; shape is also an important factor in the diagnosis of this condition.

The majority of microcephalics are imbeciles ; they are usually vivacious and are inclined to be restless.

The **mongolian** variety is so-called because the facial appearance resembles that of the Mongolian race. It is a common type and is characterised by distinctive bodily anomalies. The skull is small and round ; the palpebral fissures are oblique and slope downwards and inwards ; the eyelids are often inflamed and there is a tendency to develop cataract ; the tongue is large and transversely fissured ; the fingers are hyperextensible and can be bent over the back of the hand ; there is often a wide space between the big toe and the next. The majority of this type are imbeciles ; they are bright, placid, easily amused and often become favourites in the ward.



The **hydrocephalic** variety includes those with abnormally large heads due to the accumulation of cerebro-spinal fluid in the cranial cavity. The condition is often a sequel of meningitis. Their movements are often inco-ordinate and many of them are subject to fits.

The **syphilitic** variety is usually accompanied by signs of congenital syphilis ; most of this type are feeble-minded and tend to develop dementia paralytica in late childhood or early adolescence.

**Cretinism** is a variety which is caused by deficiency of thyroid secretion. It has characteristic bodily signs. The patient is short in stature ; the head is large ; the belly is protuberant ; the tongue is coarse and protrudes from the mouth ; the hands are short and stumpy ; the skin and hair are dry and coarse ; and there are sometimes fatty pads over the clavicles. This is the only form of mental defect in which recovery may occur as a result of treatment. The regular administration of a preparation of thyroid gland produces recovery in some and improvement, particularly in the physical condition, in most cases.

The **epileptic** variety consists of those cases in which the mental defect is associated with fits. In some, the fits are a manifestation of the general mental condition and, in others, the development of fits below a certain age may have been the cause of the failure of the mind to develop.

The **paralytic** variety includes those which have paralysis in some form.

The **isolation or special sense deprivation** variety consists of those cases which are due to blindness, deafness or both ; it is usually the result of some acute infectious illness in infancy or early childhood. Children who have lost their vision or hearing are unable to learn through the ordinary channels, but their minds may attain normal development if they are taught by special methods.

The **amaurotic** variety occurs chiefly in the Jewish race, and there is often more than one case in the same family. The condition becomes evident about the end of the third month ; it is associated with loss of vision and paralysis and usually ends fatally before the child reaches the age of two years.

The mentally defective person is more likely than the normal individual to develop a psychosis and, when this occurs, there is a combination of the symptoms of mental disorder and defect.

*Treatment.*—Mental defect, with the exception of some cases of cretinism, is incurable. In the majority, however, considerable improvement can be obtained by suitable methods of treatment. The feeble-minded may be educated to a limited extent by special methods of teaching. Imbeciles and idiots are unable to look after themselves, and the nurse must see that they are properly fed, clothed and washed. Imbeciles may be taught to dress themselves and to perform simple work under supervision. The uncleanly habits of idiots may be improved by training, and their powers of muscular co-ordination developed by suitable exercises.





## PART VII.

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### CHAPTER LXIII.

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#### **THE LAW RELATING TO THE CARE AND CONTROL OF MENTALLY DISORDERED AND DEFECTIVE PERSONS.**

The Mental Disorders Act (No. 38 of 1916) of the Union of South Africa makes provision for all cases of mental disorder or defect where, as a result of such disorder or defect, the patient is incapable of managing himself or his affairs, is a danger to himself or others, or requires care, treatment and control.

It is not intended that every mentally disordered or defective person should come under the provisions of the Act, but only those whose conduct or needs bring them within the conditions specified.

The law lays down that no person shall be admitted or detained as a patient in an institution or elsewhere except in accordance with the requirements of the Act, and heavy penalties are prescribed for a breach of this provision.

In ordinary cases, the admission of a patient into an institution must be authorised by a document called a reception order, which must be signed by a magistrate. In order to obtain a reception order, a person not under the age of twenty-one years, who has recently seen the patient, is required to make an application to the magistrate of the district in which the patient resides. On the receipt of the application, the magistrate obtains medical certificates from two doctors who have examined the patient and, if he is satisfied that the patient's mental condition justifies his detention under the Act, he may issue a reception order.

In cases of urgency, a relative or other responsible person may apply to the superintendent for the admission of a patient to an institution ; the application must be made on the form prescribed by law and must be accompanied by a medical certificate stating that the case is one of urgency. A patient cannot be detained under this authority for longer than ten days, and a reception order for further detention must be obtained from a magistrate before the expiration of this period.

The reception order authorises the detention of the patient in an institution for a period not longer than six weeks. After the patient has been admitted, all documents relating to the case, together with a report by the physician superintendent of the institution or the doctor in attendance on the patient, are submitted for the consideration of a Judge of the Supreme Court ; the Judge may make an order for the further detention of the patient, direct that he be immediately discharged, or give other instructions as he thinks fit.

The Act also provides for the detention, subject to the approval of the Minister, of persons who wish voluntarily to submit to treatment in an institution but whose mental condition is not such as to justify the issue of a certificate of mental disorder or defect.

The Act contains special provisions relating to patients under detention for criminal offences. In such cases, when a person is found to be mentally disordered or defective before or during trial, or when the verdict is that he was mentally disordered or defective at the time of committing the offence, he is placed under detention as a Governor-General's decision patient, and is subject to special legal conditions and restrictions which do not apply to ordinary patients. When doubt exists regarding the mental condition of a person charged with a crime, he is sent to a mental institution for observation. A convicted prisoner may be certified as mentally disordered or defective while serving his sentence in gaol, and is then transferred to an institution for treatment ; such cases are termed criminal patients.

The Act also prescribes that no occupier of a private dwelling shall permit more than one mentally disordered or defective person to reside in the house unless he has obtained a licence under the Act. Licences to keep an institution for the detention of two or more mentally disordered or defective persons are issued to applicants under certain conditions.

The Act makes special provision for safeguarding the rights and interests of mentally disordered and defective patients. In this connection, the following sections of the Act specify certain offences and the penalties attached to them :

69. (1) Every person who, except under the provisions of this Act, receives or detains a patient in an institution, or for payment takes charge of, receives to board and lodge, or detains a patient, shall be guilty of an offence.

(2) The superintendent of a licensed institution shall be guilty of an offence if he receives, detains, or suffers to remain in that institution a greater number or a different class or sex of persons than he is authorised to receive or detain therein by the terms of the licence.

70. Every person shall be guilty of an offence if he—

- (a) makes any wilful misstatement of any material fact in any petition, application, statement of particulars, report, or reception order under this Act ;
- (b) makes a wilful misstatement of any material fact in any medical certificate or other certificate, or in any statement or report of bodily or mental condition under this Act ;
- (c) knowingly, makes in any book, statement, or return, any false entry as to any matter as to which he is by this Act or by any regulation, required to make an entry ;
- d) wilfully obstructs any magistrate, commissioner, curator, curator ad litem, member of a board, medical practitioner, policeman, or any person



*THE LAW RELATING TO THE CARE AND  
CONTROL OF MENTALLY DISORDERED  
AND DEFECTIVE PERSONS.*

specially authorised by the Minister or under any order of court, in the exercise of any of the powers conferred by this Act, or by any regulation.

71. Any officer, nurse, servant, or other person employed in any institution or other place, or any person having the care or charge of a patient (whether by reason of any contract, or any ties of relationship or marriage or otherwise), who ill-treats or wilfully neglects any patient shall be guilty of an offence.

72. Any officer, nurse, servant, or other person employed in any institution or other place, who wilfully permits or assists or connives at the escape or attempted escape of any patient, or who secretes a patient shall be guilty of an offence.

73. (1) It shall not be lawful to employ any male person in any institution in the personal custody or restraint of any female patient except under the continual supervision of a white female nurse and then only on the instructions of the superintendent of the institution, who shall report such employment to the Commissioner.

(2) This section shall not be construed as prohibiting, or imposing a penalty in respect of, the employment of male persons on such occasions of urgency as may in the judgment of the superintendent of the institution render such employment necessary, but such an employment shall immediately be reported to the Commissioner.

74. (1) Any person who has carnal knowledge of any female who is detained under the provisions of this Act, or is otherwise under oversight, care, or control as mentally disordered or defective, shall be guilty of an offence.

(2) For the purposes of this section any female shall be deemed to be detained in any institution, house, or other place, although absent on leave or otherwise therefrom or escaped therefrom, until she is duly discharged therefrom in due course of law, or ceases to be under oversight, care, or control as mentally disordered or defective.

(3) It shall be a defence in any prosecution for an offence against this section if the accused proves that, at the time of the act committed, he did not know and had no reasonable cause to believe or suspect that the female was so detained or was under oversight, care, or control as mentally disordered or defective.

(4) The consent of the female shall not be a defence in any prosecution for such offence.

75. (1) Any person who contravenes any of the provisions of this Act in respect of which no penalty is by this Act expressly provided, or who contravenes any regulation shall, upon conviction, be liable to a fine not exceeding twenty pounds, or to imprisonment with or without hard labour for a period not exceeding three months.

(2) Every person who is guilty of any act or omission which is declared to be an offence under sections sixty-nine to seventy-two inclusive or under section seventy-four shall be liable on conviction to a fine not exceeding one hundred pounds, or to imprisonment, with or without hard labour, for a period not exceeding two years, or to such imprisonment without the option of a fine or to both such fine and imprisonment.

(3) Where it is necessary for a patient to be examined in connection with a prosecution under this Act, the examination and inquiry shall, where possible, be held at the institution where the patient is detained.

77. Mechanical means of bodily restraint shall not be applied to any patient unless the restraint is necessary for the purposes of surgical or medical treatment, or to prevent the patient from injuring himself or others ; and in every such case—

(a) a medical certificate shall, as soon as it can be obtained, be signed, describing the mechanical means used, and stating the ground upon which the certificate is founded ;

- (b) the certificate shall be signed, in the case of a patient in an institution or other place of confinement, by a medical officer thereof, and in the case of a single or private patient, by his medical attendant ;
- (c) a full record of every case of restraint by mechanical means shall be kept from day to day ;
- (d) a copy of the certificates and records under this section shall be sent to the Commissioner at the end of every quarter.

For the purposes of this section “ mechanical means ” shall be such instrument as the Governor-General may, by regulation, determine.

### **Restraint and Seclusion.**

**Regulation 30.** The circumstances under which mechanical means of bodily restraint may be used are set forth in section seventy-seven of the Act.

“ Mechanical means of bodily restraint ” shall be and include all instruments and appliances whereby the movements of the body or any of the limbs of a patient are restrained or impeded ; and a full and sufficient description of the mechanical means employed shall be entered by the superintendent or medical attendant in the Register of Restraint and Seclusion.

**Regulation 31.** Whenever a patient, between the hours of 10 a.m. and 5 p.m., is in a room alone, and with locked doors, or is otherwise compulsorily confined alone during those hours, the case shall be recorded in the Register of Restraint and Seclusion as “ seclusion ”.

### **Letters.**

**Regulation 75.** All letters to and from patients detained in a mental hospital shall pass through the hands of the physician superintendent or, in case the patient is detained in a gaol, the Magistrate, who shall forward (unopened) direct to the addressee all letters written by a patient and addressed to the Governor-General, a Minister of State, a Judge of the Supreme Court, the curator ad litem, Commissioner, or a member of a Mental Hospital Board.



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